



## **Assessing the Impact of Microenterprise Services (AIMS)**

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# **THE IMPACTS OF MICROCREDIT: A CASE STUDY FROM PERU**

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## EXECUTIVE SUMMARY

In the past several years, there has been increasing interest in the use of microcredit as a tool for improving the lives of the poor. The idea is simple: support the business enterprises of the world's small-scale, low-income entrepreneurs by providing them with access to reliable credit on reasonable terms. The appeal of microcredit cuts across the political spectrum, since it combines the values of hard work, self-help, free markets, and improving the economic conditions of the poor. There are now thousands of programs offering microfinance services to entrepreneurs in both developing and developed countries.

The growth of the microfinance industry has been accompanied by questions about the impacts of microfinance. Do microfinance services make a difference in the lives of the clients? Do microfinance programs reach the poor? Is donor money for microfinance well spent? In this paper, we report the findings of an impact evaluation conducted between 1996 and 2000 with Acción Comunitaria of Peru (ACP), which later became Mibanco. This impact evaluation was part of USAID's Assessing the Impact of Microenterprise Services (AIMS) Project.

### **The Climate for Microenterprise in Lima, Peru**

Over the last decades, Peru's economy has experienced major crises and undergone structural adjustments, resulting in profound impacts on Lima's population. Both as a result of and in spite of this difficult environment, microenterprises have become an important alternative to scarce, low-paying formal sector employment and play a central role in generating income for many of Lima's households. These enterprises, which are often informal in a legal sense and generally employ only a single entrepreneur or an entrepreneur and one or two unpaid family members, provide a substantial percentage of Lima's overall employment and have helped households not only to survive, but also to accumulate assets and improve their economic circumstances.

Between 1997 and 1999, entrepreneurs in Lima faced recessionary conditions as the Peruvian economy suffered several severe shocks. These shocks stemmed from the El Niño phenomenon and several financial crises around the world. These conditions combined to create an extended period of economic contraction and low internal demand, which translated into low sales and low profits in the microenterprise sector.

### **Design of the Impact Evaluation**

The evaluation was based on a conceptual model of the household economic portfolio that led to impact hypotheses at the enterprise, household, and individual levels. The conceptual model resolved the problem of fungibility by using the household as the unit of analysis and evaluating a full range of potentially significant changes in clients' welfare. The research design was based on a mixed method approach, combining survey and case study data. The survey (quantitative) data provided information on the direction and magnitude of impacts, while the case study (qualitative) data helped to explain the processes by which any changes occurred.

The sample design for the survey was quasi-experimental, including both clients of ACP/Mibanco and a comparison group of non-clients with similar characteristics. A two-stage sampling approach was followed, with representative geographical areas selected in the first stage, and random sampling of clients and non-clients in the second stage. The 1997 baseline survey included 701 respondent households, with the 1999 survey resulting in a longitudinal sample of 529 households: 1) 305 client households in the *treatment group*; 2) 175 non-client households in the *control group*; 3) 38 households in the *new entrant group* (who had received a first ACP/Mibanco loan between the two survey rounds); and 4) 11 client households who participated in the case study research.

Several statistical methods were used to analyze the survey data. The techniques for exploring differences between groups and changes in the impact variables between 1997 and 1999 included t-tests, chi-square tests, ANOVA, and gain score analysis. The impact hypotheses were tested using analysis of covariance (ANCOVA). In effect, the ANCOVA procedure statistically “matches” observations in the treatment and control groups that have the same 1997 values for the impact variable and a range of moderating variables, such as gender and enterprise sector, which might also be related to changes in the impact variable. The procedure then compares the matched observations in terms of the 1999 values for the impact variable to determine whether there are any consistent differences between the treatment and control groups. For example, the ANCOVA estimate of the impact of microcredit on enterprise revenue controlled for 1997 differences between the treatment and control group enterprises in terms of 1997 enterprise revenue, enterprise sector, location, ownership status, and gender of the entrepreneur. If, given a similar starting point on all of these variables, the treatment group enterprises consistently had higher revenue in 1999, this would suggest that microcredit may have had a positive impact on microenterprise revenue.

The case study households were interviewed intensively in 1998 and again in 1999 based on a set of research propositions about the ways that program services contribute to changes in the impact variables. The research protocol was designed to reconstruct the chain of events leading to those changes. By tracing the sequence of events leading from program participation to the impacts measured in the survey data, the case study results complement and strengthen the survey results and help to improve the case for attribution.

### **Households, Their Enterprises, and Credit**

All of the households in the sample lived in metropolitan Lima and had at least one microenterprise. The majority of respondents were female (61 percent) and married (80 percent). The average age of the respondents was 42 years old. Respondents’ households had an average of five members, of whom three were economically active. The majority of households (81 percent) had minor children living at home, nearly all of whom were enrolled in school (98 percent). Households reported an average of three income sources, from which they earned an average household income of US\$7,815 in 1997. Microenterprises generated 65 percent of total household income. About one-third of the households in the sample were considered poor by national standards in 1997.

The 518 households in the final sample for the longitudinal study owned 759 enterprises, which generally fit the official definition for a microenterprise in Peru. The majority of the enterprises in the sample (63 percent) were commercial-sector enterprises, and over half were based in the respondent's home. In addition to the entrepreneur, one or more members of the entrepreneur's household might also work in the enterprise. In the households' primary enterprises, which were defined as the enterprises that received the ACP/Mibanco credit or the corresponding enterprises among the control group respondents, an average of 2.2 people were employed, a number which included the entrepreneur.

During the study period, ACP/Mibanco offered only one product: microenterprise loans that were relatively short and easily renewable. This microcredit was extended both to individual borrowers and to members of solidarity groups. In 1997, average loan size was US\$586 and loans averaged 3.4 months in length. Frequent payments were the norm, with loan installments due either weekly or biweekly for over 80 percent of clients. The size of the ACP/Mibanco loan in 1997 was about one-third the amount of household income received over a comparable period. Entrepreneurs had several alternative sources of microenterprise credit, including supplier credit, ROSCAs, moneylenders, commercial banks, and NGOs, although respondents in the non-client group were screened to have not received bank or program microenterprise credit prior to the 1997 baseline survey. The survey and case study results indicated that households relied heavily on microenterprise loans and other types of formal and informal loans as part of their financial management strategies.

### **Impacts of Microcredit on Microenterprises**

Within the context of the recessionary economy between 1997 and 1999, the results of the impact analysis indicate that microcredit may have had positive impacts on microenterprises, including positive impacts on enterprise revenue, fixed assets, employment, transaction relationships, and formalization. In some cases, the impact was to increase the levels of these enterprise performance variables. In other cases, microcredit served to insulate the enterprises from the poor economic climate so that drops in these variables were not as large for clients' enterprises as they were for non-clients' enterprises.

***Microenterprise Revenue.*** Microcredit appears to have had positive impacts on microenterprise revenue in both the treatment and new entrant groups. In monetary terms, treatment group households were estimated to have earned over US\$1,000 more than control group households in combined annual microenterprise net revenue (profits) from all enterprises associated with the household. In addition, combined enterprise net revenue was estimated to have increased US\$740 more per year for new entrant households than for control group households.

The implication of these findings is that both old and new borrowers may be exploiting the fungibility of microcredit to increase combined profits from all microenterprises in their household economic portfolios. The data from the case study research indicate that the likely path by which these impacts occur is through an increase in enterprise working capital, so that entrepreneurs can buy more inventory, secure lower input prices, and increase sales and profits.

***Enterprise Fixed Assets.*** Microcredit also appeared to have positive impacts on fixed asset accumulation in the primary enterprises of treatment group households. There was no evidence of this impact for the new entrant group, perhaps because the microcredit impacts on asset accumulation take time to occur. The results suggest that primary enterprises in the treatment group accumulated US\$500 more in enterprise fixed assets than did enterprises in the control group. As might be expected, the accumulation of fixed assets was more rapid in the industrial sector than the commercial or service sectors.

***Enterprise Employment.*** Microcredit appeared to have a positive impact on enterprise employment for all four of the variables used to measure the amount of time employed. If all of the microenterprises associated with the households are considered, the results of the impact analysis indicate that those households receiving microcredit provided about nine more days of total employment per month and 3.25 more days of paid employment per month (for non-household members) than households not receiving microcredit.

The positive impact of microcredit on employment is relevant to macroeconomic policy in Peru, since microenterprises employ a significant proportion of the labor force. Nine days of extra employment per month spread across all the enterprises associated with an individual household may not seem large. However, if this estimate is extrapolated to the approximately 40,000 clients that ACP/Mibanco had at the end of 1999, the magnitude of the impact is striking: over 4.3 million workdays per year, or the equivalent of 17,414 full-time jobs, of which 6,259 are paid positions for non-household members. This translates into one full-time job for every 2.3 loans outstanding at the time.

***Transaction Relationships.*** Microcredit appeared to have positive impacts on two types of transaction relationships. First, there was evidence that microcredit helped commercial entrepreneurs buy inputs in more advantageous ways; client enterprises were estimated to be about nine percent more likely than their control group counterparts to have changed their main source of suppliers from retailers to wholesalers. The case study informants explained that microcredit made it possible for them to save money by buying inputs in bulk at lower prices.

Microcredit also appeared to help entrepreneurs gain ownership of their business premises. This is considered a positive impact because, if a premise is owned, the entrepreneur may have more incentive to improve it, does not have to spend revenue on rent, and does not have to fear eviction. Entrepreneurs using microcredit gained ownership of their business premises at a rate estimated to be nine percent higher than those in the control group with comparable businesses.

***Formalization.*** Despite increased government pressure on entrepreneurs to formalize their enterprises, there was little change between 1997 and 1999 in the percentage of enterprises that were licensed with the municipality or registered with the tax authority. Nevertheless, microcredit appeared to have a positive impact on municipal licensing. Among enterprises with similar characteristics in 1997, treatment group enterprises were estimated to have increased their level of municipal licensing by four percent, compared to a nine percent decline for the control group. Even though case study informants reported increasing pressures to register with the tax authority, the statistical results did not indicate any impact of microcredit on this variable.



## Impacts of Microcredit on Households

The difficult economic conditions between 1997 and 1999 also affected respondent households, resulting in significant reductions in many welfare variables. While household income and diversification of income held steady, there were reductions in expenditures on housing improvements, household appliances, and food and beverages. Not all expenditures fell, however. Households reported significantly higher investments in education and in enterprise fixed assets in 1999. Households also reported a higher incidence of financial shocks, and turned more frequently to coping strategies that adversely affected their productive assets.

***Household Income.*** Microcredit appeared to have positive impacts on household income. Given the same 1997 income level, treatment group households were estimated to have US\$1,200 more in 1999 annual income and US\$266 more in per capita income (both in real terms) than comparable control group households. Put in context, a US\$266 increase in per capita income represents more than 20 percent of the average per capita income for the sample. These impacts on income can probably be attributed to growth in enterprise revenue, which would indicate that microcredit-driven changes in enterprises result in improvements in household welfare.

***Income Diversification.*** Among poor households, those who received microcredit appear to have been better able to maintain their levels of income diversification than poor households without microcredit, who became less diversified over the study period. This is consistent with the idea that poor households manage risk by having several sources of income, so that some income will be earned, even when one income source fails. For the non-poor, however, the findings indicate that microcredit had the impact of reducing income diversification among new entrants: non-poor households who were new borrowers maintained their original levels of diversification while similar control group households became more diversified over the study period. These results should be interpreted within the context of the recession. The treatment group poor were better able to maintain their desired higher levels of diversification than the control group poor, while the non-poor in the new entrant group were better able to maintain their desired lower levels of diversification (i.e. to maintain greater specialization).

***Household Assets.*** Spending on housing improvements and household appliances declined sharply between 1997 and 1999 for all groups, and there was no evidence that microcredit had an impact on these variables. The spending reductions were probably related to the downturn in the economy. During difficult economic times, households may delay the acquisition of any non-essential items. Purchases of small and large appliances for personal use serve primarily to increase living standards. Housing expenditures, on the other hand, represent a multipurpose investment, and can provide improved quality of life, enhanced microenterprise income, auxiliary rental income, and even retirement income. While the case study data indicate that credit plays an important role in facilitating housing investments, the growing availability of home improvement loan products may imply little additionality from microenterprise credit.

***Spending on Education.*** There were large and significant increases in education expenditures for both the treatment and control groups between 1997 and 1999, but there were no measurable impacts of microcredit. In fact, the results suggest that microcredit may have had a negative impact on education spending among new borrowers. New entrants were estimated to spend US\$59 less per student in 1999 than comparable households in the control group. New entrant households may have reduced investments in education to focus their resources on improving their businesses and adjusting to the exigent demands of credit repayment. The combined results indicate that this negative impact may be temporary, because there was no evidence of negative impacts on the treatment group, who had taken their first loans at least two years before 1999.

***Spending on Food.*** Between 1997 and 1999, non-poor households reduced their per capita daily food expenditures, probably by cutting back on higher priced food items. By contrast, the poor households in the treatment group increased their expenditures on food. In fact, there was weak evidence that microcredit may have had a positive impact on food expenditures for poor households, estimated at US\$0.10 per person per day.

***Coping with Shocks.*** There were more shocks reported for 1997-1999 than for 1995-1997. Although it was uncommon for households to cope with shocks by liquidating productive assets, the evidence suggested that households who received microcredit were more likely to cope with shocks in this way. The magnitude of this negative impact was even higher for the poor in the treatment group. With already low income levels, the poor have fewer options for coping with a shock while continuing to make payments on a loan. The results from the case studies support these findings, suggesting that the pressure to make loan payments can turn what might ordinarily be a minor problem into a major financial crisis.

***Intergenerational Launching.*** Some parents with microenterprises seek to “launch” their children into entrepreneurial occupations by helping them to start their own microenterprises. The results of a probit analysis suggest that microcredit may have a positive impact on intergenerational launching, in that households in the treatment group were 62 percent more likely to report a launch on one or both of the surveys than households in the control group.

## **Impacts of Microcredit on Individuals**

The use of credit may result in both positive and negative impacts on individual borrowers. Positive impacts seem to be limited to increased feelings of preparedness for the future. There was some evidence that microcredit may have had negative impacts on client self-esteem, which may stem from stress relating to the pressure to repay loans. Also important from a policy perspective are the findings related to gender. Specifically, female entrepreneurs tend to exercise more control over household and enterprise resources and also appear to save more consistently than male entrepreneurs.

***Control over Household and Enterprise Resources.*** There was no evidence that microcredit had an impact on intrahousehold control over resource-related decision making. This may be because all groups showed similar increases in cooperative decision making. Females were more likely to exercise exclusive control over resources than were males, probably because females were more likely to work in their enterprises alone. While it is generally believed that women

around the world exercise less influence over the allocation of household and enterprise resources than their husbands, the results of this study indicate that the female entrepreneurs in the sample are significantly *more* likely to have control over decisions related to loans and enterprise revenue than their male counterparts. Although this finding is probably related to cultural factors unique to the region, it is important because it challenges conventional wisdom.

***Self-Esteem and Respect from Others.*** There was some evidence that microcredit may have had a negative impact on the way that treatment group respondents felt about the importance of their economic contributions to their households. These findings must be interpreted with caution, however, due to their marginal statistical significance and to the weakness of the measures used in the survey. The case study evidence supports the finding, however, indicating that the pressures to make timely payments on loans can cause a strain on household relationships and result in lower levels of self-esteem among borrowers.

***Personal Savings.*** There was no evidence that microcredit had an impact on personal savings. Over the study period, the incidence of savings declined significantly for the sample as a whole, which may be related to the economic recession. Interestingly, the incidence of savings for males dropped over the study period while the incidence for females remained constant. Men's savings behavior appears to be more sensitive to economic conditions than does the savings behavior for women. The case study results indicated that entrepreneurs in the commercial sector would prefer to place their liquidity in inventory rather than savings accounts.

***Attitudes and Orientation Toward the Future.*** Microcredit may have had a positive impact on attitudes toward the future; treatment group respondents were estimated to be eight percent more likely than non-clients to report feelings of preparedness. For the new entrant group, who were estimated to be 20 percent more likely to report confidence about the future, credit appeared to provide an almost unrealistic confidence boost, given the economic climate. This apparent spike in feelings of preparedness is in stark contrast to the sharp drops in confidence levels for the control group over the same period. Although the results indicate that increases for the new entrant group were microcredit impacts, it is also possible that new entrants simply had better business opportunities, which led to brighter outlooks and a greater willingness to take loans.

## **Summary and Implications of Findings**

Microcredit appears to have both positive and negative impacts on enterprises, households, and individuals. The evidence suggests that by including these relatively small loans into their financial management practices, clients can consistently improve enterprise performance and increase household welfare. The positive impacts of microcredit appear to extend to the poor as well, although poor clients were more likely to turn to asset-reducing coping strategies than their non-client counterparts. The results of a separate analysis indicated that for several key variables—including enterprise revenue, enterprise fixed assets, business premise ownership, business licensing, intergenerational launching, and household income—increased time in the microcredit program was associated with better outcomes on these variables.

***Limitations and Contributions of the Study.*** The study findings should be interpreted cautiously. The results have the greatest relevance within the context of short-term, “minimalist”

microenterprise credit. Some of the methodological limitations include possible selection bias, lack of pre-treatment measures, weaknesses in some impact indicators, and no measure of displacement effects. Despite these real limitations, the study represents a serious and comprehensive analysis of the impacts of microcredit and makes several contributions to the field of impact evaluation in microfinance by addressing the problems of fungibility and attribution. The study generates estimates of the directions and magnitudes of several of the economic impacts associated with microcredit, results that are appropriate for assessing the relative costs and benefits of using microcredit to achieve social development objectives.

***Implications for Microfinance Organizations.*** The findings refute common industry assumptions that borrowers engage in long-term relationships with microfinance organizations and seek ever-increasing loan amounts over time. Only about 40 percent of the original client sample had a current loan in 1999, and they adjusted their loan requests in response to changing circumstances. Microfinance organizations could increase their responsiveness to microentrepreneurs by offering mid-cycle loans to commercial-sector entrepreneurs, longer term loans to industrial-sector enterprises, larger loans to the most profitable entrepreneurs, and non-financial assistance in navigating the difficult business tax system. In addition, microfinance organizations could offer products and services not directly related to microenterprises, such as credit and savings programs related to education and housing improvements. The study findings reinforce the notion that microenterprise development loans are only one subset of microfinance.

***Policy Implications.*** A central policy conclusion from the study is that low-income households that have sound financial management practices can benefit from a well-developed microfinance industry. A microfinance industry that provides a full range of services for small transactions may increase the financial options enough to provide the critical boost that low-income households need to achieve their goals. The specific microcredit product evaluated in this study, with its short length and frequent payments, appears to be most appropriate for owners of commercial microenterprises, where inventory turnover provides a steady cash flow.

In contrast to the global stereotype, female entrepreneurs in Lima enjoy freedom of movement and a significant role in household decision making. The close affiliation between women and the commercial sector may help to explain why the majority of ACP/Mibanco clients are women and why the organization continued to attract and retain more female clients than males. The central role that female entrepreneurs appear to play in the economic resurgence of Lima's popular and marginal areas led one ACP/Mibanco credit agent to remark that "the women are rebuilding Peru."

In closing, the findings indicate that microcredit, by enhancing the income that households receive from their microenterprises, has an important positive impact on the general welfare of households. While the clients of ACP/Mibanco are not the "poorest of the poor," most have incomes near the poverty line. Taken as a whole, the results suggest that households receiving microcredit are better off than their non-client counterparts, and that some of these benefits can be attributed to their participation in the microcredit program.

## **Section 1 – Introduction**

In the past several years, there has been increasing interest in the use of microcredit as a tool for improving the lives of the poor. Some in the development community have considered microcredit to be the most promising approach to development since the Marshall Plan and the Green Revolution. The promise of microcredit has been extolled by influential donors, heads of state, and leaders of industry. As the twenty-first century opens, the interest and resources devoted to microcredit continue to grow unabated.

The idea behind microcredit is simple: support the business enterprises of the world's small-scale, low-income entrepreneurs by providing them with access to reliable credit on reasonable terms. The appeal of microcredit cuts across the political spectrum, since it combines the values of hard work, self-help, free markets, and aid to the poor. Using credit delivery approaches that reduce or shift the transaction costs of small-scale lending, there are now thousands of microcredit programs in both developing and developed countries.

The growth of the microcredit industry has been accompanied by several debates, including a concern that microcredit encourages the poor to take on detrimentally high levels of indebtedness. At the same time, there has been increasing recognition that the poor need more than credit; they need a full range of microfinance services, including savings and insurance services. There is also a renewed interest in supporting microenterprises through the provision of non-financial, business development services.

As the industry has matured, microfinance organizations have been challenged to become financially self-sufficient. By covering their costs out of interest and fees, rather than relying on subsidized or donated funds, microfinance organizations can offer continued and expanded services over the long run. In some ways, the push toward financial sustainability for the microfinance industry completes a circle: what began as a philanthropic effort to help the poor benefit from their own businesses has shifted over time to focus on sound business practice within the microfinance industry, with the ultimate goal being a sustainable microfinance industry that increases the financial management options available to the poor.

And yet, some people assert that the drive toward commercialization is leading to a shift in the focus of the industry away from poorer clients. These critics question whether a financially sustainable microfinance industry will continue to provide financial services to the original clientele. In the push for financial sustainability, there may be a “client creep” away from the lower income clients. These concerns have provided impetus to the search for methods to assess the poverty levels of clients.

### **A. The Question of Impact**

The debates within the microfinance industry inevitably lead to questions about the impacts of microfinance. Do clients of microfinance organizations benefit from the credit or other services they receive? Do microfinance programs reach the poorer segments of society? Are impacts similar for the poor and the non-poor? Is donor money for microfinance well-spent?

It has been suggested that clients' willingness to borrow and repay is *prima facie* evidence of positive impact. Yet, this does not provide useful answers to the recurring impact-related questions: Who benefits and in what specific ways do they benefit? Are the benefits experienced more within the enterprise, or do they spill over into the household more generally? If so, are benefits experienced differentially within the household? What about the benefits for the borrower as an individual? Are certain types of clients, such as males or females, more likely to benefit? Do some types of impacts take longer to occur than others? And how does the client use the microfinance service within the larger context of the household economy and existing constraints and opportunities?

The answers to these questions are not solely of academic interest. They are also of interest to donors and practitioners, who need to know where to focus their efforts in order to most effectively help specific groups, such as the poor and women. Impact information is critical for organizations that use microfinance as a tool for achieving other objectives, such as improved nutrition, education, or gender equity. Impact information can indicate whether microfinance is an appropriate vehicle for pursuing these other objectives. As donors seek to allocate their scarce resources efficiently, impact information can provide the data that are needed for the benefit side of a cost-benefit analysis.

The information from an impact evaluation can also be used to improve the profitability and financial sustainability of microfinance organizations by helping these organizations to understand who their clients are and how their clients use their services. By understanding what motivates clients to use their services, what changes in product features clients want, and what new services clients need, microfinance organizations can position themselves to improve profitability by retaining and attracting new clients.

## **B. Overview of the Study**

Beginning in 1996, Acción Comunitaria of Peru (ACP) agreed to participate in an extensive impact evaluation in cooperation with USAID's AIMS Project.<sup>1</sup> At that time, ACP was a non-governmental organization affiliated with Accion International, operating a well-established microcredit program in the metropolitan area of Lima, Peru. During the course of the four-year impact evaluation study, ACP transformed as an organization to achieve formal bank status and assumed the new name of Mibanco. While the transformation process involved significant change at the level of the organization, there was little that changed from the borrower's perspective when, in 1998, the clients of ACP quietly became the clients of Mibanco.

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<sup>1</sup> The impact study in Peru was one of three large-scale impact assessments undertaken as part of the Assessing the Impact of Microenterprise Services (AIMS) Project. The other two impact evaluations were conducted in India and Zimbabwe. All three studies shared the same conceptual framework, core hypotheses, research design, objectives, and methods. The goals of the AIMS Project are to gain a better understanding of the processes by which microenterprise services strengthen businesses and improve the welfare of microentrepreneurs and their households and to improve the ability of USAID and its partners to assess the impacts of their microenterprise programs. Additional information on the AIMS Project, as well as copies of the AIMS publications, are available on the web site (<http://www.mip.org>).

### **B.1. Objectives and Approach**

In this paper, we report the findings of the impact evaluation, which was conducted between 1996 and 2000. The objective of the evaluation was to assess the impacts of participation in the ACP/Mibanco microcredit program at three levels: 1) impacts on the microenterprise; 2) impacts on the household of the borrower; and 3) impacts on the borrower as an individual. Impact hypotheses at these three levels (enterprise, household, and individual) were formulated and tested based on a conceptual model of the microenterprise as being embedded in a larger household economic portfolio consisting of numerous activities managed by one or more decision makers within the household (Chen and Dunn 1996).

The impact evaluation followed a mixed method approach, which combined the collection of survey data, case study data from in-depth interviews, and credit data provided by ACP/Mibanco. The data are longitudinal, with the survey data being collected in 1997 and 1999, and the case study interviews being conducted in 1998 and 1999. The survey respondents included both clients of ACP/Mibanco and a control group of non-clients; the case studies included only clients.

### **B.2. General Findings**

The 1997 baseline data provided many insights into the demographic and economic characteristics of the microenterprises, households, and entrepreneurs in the study (Dunn 1999). The baseline clearly showed that the clients of ACP were not confined to the “poorest of the poor.” While some client households were below the national poverty level, the majority were not. The baseline showed that there had been minimal market penetration within metropolitan Lima by formal and program-based microcredit organizations as of 1997. The baseline results also validated the household economic portfolio as an appropriate conceptual framework for the impact evaluation.

In many ways, the period between 1997 and 1999 was a difficult time for Lima’s microentrepreneurs. The survey respondents experienced it as a period of economic stagnation or recession. Household incomes held steady, while there were large and significant drops in spending on household appliances and housing improvements. Even per capita daily food expenditures dropped slightly, and households reported significantly more financial shocks. There were some positive trends between 1997 and 1999, including large increases in expenditures on children’s education and solid increases in households’ enterprise assets. Other than the increase in enterprise assets and a slight increase in the rate of ownership of the business premise, other trends at the enterprise level were not favorable: enterprise revenue was stagnant across the period and total employment fell.

The impact analysis indicates that the ACP/Mibanco microcredit program may have provided clients with some protection from the negative economic influences around them. The household income for client households fared measurably better over time and borrowers felt better prepared to face the future than their non-client counterparts. There is also some evidence that the clients’ enterprises experienced numerous positive impacts, affecting enterprise revenues, fixed assets, and employment. The results indicate differences in the magnitude of

these impacts for different subgroups, most notably for new entrants and for the poor. Along with the evidence of positive impacts, there were also indications that microcredit can have negative impacts on clients.

### **C. How to Use This Report**

In this report, we attempt to provide enough detail for those readers who want an in-depth understanding of the study, while still making it possible for other readers with more limited interests to locate the specific information they want or need. The sections are somewhat modular and we have made liberal use of subheadings within the sections. Extensive data tables are available as a supplement for the reader who may have a focused interest on variables that are not discussed in the text.

The body of the report is divided into two parts. Part one provides the detailed background for the study, including descriptive information about the households and enterprises in the sample. The results of the impact analysis are presented in part two. A brief introduction is provided for each of the two parts, particularly to assist the reader in making the transition from the background information and description in part one to the presentation of the impact results in part two. Section eight, the final section, discusses the implications and significance of the findings.



## **INTRODUCTION TO PART ONE: SECTIONS 2, 3, AND 4**

Part one consists of three sections, with each section providing a different type of information that sets the stage for the impact analysis. The background and context for the impact evaluation is described in section two, with an emphasis on the economic setting for microenterprise in Lima and the ACP/Mibanco microcredit program. Section three documents the research design and methods used in the study, including the conceptual framework and hypotheses, data collection methods, and analytical approaches. Either of these sections can be skipped, or the reader can wait to read them after reading the results sections.

Section four provides a detailed portrait of the survey respondents and the case study households. The information in section four is drawn directly from the data collected for the study. The section provides a lengthy description of the characteristics of the entrepreneurs, households, and enterprises in the sample. Thumbnail sketches for each of the case study households are provided. The section draws from both the survey and case study data to describe the credit use practices of entrepreneurial households in the study area. The information in section four, even though it comes from the data collected for the study, is intended to be descriptive; it completes the background for interpreting the impact evaluation results, which are reported in part two.



## Section 2 – The Environment for Microenterprises in Lima and the ACP/MIBANCO Credit Program

Entrepreneurs in Lima, Peru, face challenging physical, social, institutional, and economic factors which provide both constraints to and opportunities for the growth and success of their businesses. Lima, located on the arid central coast, is the largest city in Peru, containing nearly one-third of the country's population. Lima's residents are ethnically and culturally divided between people of coastal, or *criollo* descent and those with mountain, or *serrano* roots, the prior term being generally associated with people of European origin and the latter indigenous. While Lima was primarily *criollo* for much of its existence, since 1940 a deluge of immigrants from rural areas has helped to multiply the city's population by eleven times and radically changed its cultural make-up.

Upon arrival, these immigrants have often encountered social resistance to their integration into Lima's society, forcing them to create an existence on the fringes, a reality which is physically evident in settlement patterns. Immigrants, finding that access to formal housing has often been denied, have invaded empty lands in and around Lima and established informal settlements. They have also faced resistance to their integration into the formal economy. Often discriminatory laws, regulations, and social barriers have militated against their efforts to establish formal businesses, forcing them instead to resort to small enterprises which operate outside of the law, and relegating many to a life of poverty and struggle.

Over the last decades, Peru's economy has experienced major crises and undergone structural adjustments, resulting in profound impacts on Lima's population. Once buoyed by government spending and resource transfers from the countryside, Lima's economy crashed with the rest of Peru's in the 1980s, a decade which saw economic contraction, the fall of real incomes, drastic increases in unemployment and poverty, and hyperinflation. In an effort to reverse economic decline, in the 1990s Peru undertook a far-reaching structural adjustment process. This process has been successful by many measures: the economy is growing, and inflation and poverty levels are down since 1990. In other areas, however, the process has yet to have positive impacts. Though unemployment levels are nearly equal to those in 1990, underemployment is up. While cuts in government spending resulted in lost jobs for many bureaucrats, employment in the formal private sector has remained static and unable to absorb the flow from the public sector; thus, it is the informal sector which has borne the burden of generating employment for Lima's residents.

Both as a result of and in spite of the difficult social, institutional, and economic environment, microenterprises have come to play a central or significant supporting role in the livelihood strategies of many of Lima's households. These enterprises, which are often informal in a legal sense and generally employ only a single entrepreneur or an entrepreneur and several unpaid family members, have come to provide a significant percentage of Lima's overall employment and have helped households to not only survive, but to accumulate assets and improve their economic circumstances. Despite factors such as bureaucracy, corruption, crime, and an often unfavorable regulatory environment, the microenterprise sector has become an important alternative to scarce and low-paying formal private sector employment. In response to the sector's importance to the livelihoods of so many households, recent years have seen the

establishment of many programs designed to serve the needs of the microenterprise sector. Of these programs, perhaps the most prevalent and promising are those that provide microenterprise credit.

## **A. Lima, Peru**

In 1998, Peru's population was estimated to be 24,801,000 persons, 72 percent of which live in urban areas. Nearly thirty percent of the population resided in metropolitan Lima, the largest urban area in Peru with over 7,200,000 inhabitants (Webb and Fernandez Baca 1999, 217). In 1997, 27 percent of the 12,000,000 persons who made up Peru's economically active population (EAP) resided in metropolitan Lima (Webb and Fernandez Baca 1999, 565).

Peru's population consists of native Americans, mestizos, whites, blacks, and Asians. Blacks and Asians, which make up less than five percent of the population, live primarily in coastal urban areas. The mestizo population is perhaps the most prevalent in urban areas, particularly given that people of indigenous origin are often considered to be mestizo once they adopt the Spanish language and western dress and live in an urban center. In reality, especially in urban Peru, it is often difficult to differentiate between indigenous people and mestizos, or between mestizos and whites. Indeed, residents of Lima increasingly classify themselves in terms of cultural characteristics instead of ethnic ones, distinguishing themselves as *criollos* (lighter-skinned people of coastal descent) or *serranos* (darker-skinned people of highland descent) (Rudolph 1992).

## **B. Settlement Patterns**

### **B.1. Migration and Population Trends**

In 1998 the population of Lima was 11 times what it was in 1940. This trend reflects a general rural-to-urban migration trend which has resulted in a dramatic reversal of the rural-urban distribution of Peru's population. In 1940, two-thirds of the population lived in rural areas. By 1999, nearly three-quarters resided in urban areas (INEI 1999b). Migration has historically been motivated by promise of higher wages, economic opportunity not available in the countryside, and access to health care and education (De Soto 1989), and more recently, to escape the violence related to the armed conflict between the Peruvian armed forces and the Shining Path insurgency.

Migrants, once they began to arrive in large numbers, did not find themselves welcome. They encountered social, economic, and legal systems which were not designed to include them, and which were often meant to exclude them. The traditional inhabitants of cities, descendants of Spanish colonists, erected formal and informal barriers to newcomer integration into the social and economic fabric of urban areas. Some of the most significant barriers were those which made it difficult to secure adequate, affordable shelter and to find decent employment (De Soto 1989). As De Soto writes:

The migrants discovered that their numbers were considerable, that the system was not prepared to accept them, that more and more barriers were being erected against them,

that they had to fight to exact every right from an unwilling establishment, that they were excluded from the facilities and benefits offered by the law, and that, ultimately, the only guarantee of their freedom and prosperity lay in their own hands. In short, they discovered that they must compete not only against people but also against the system. . . . Thus it was, that in order to survive, the migrants became informals (De Soto 1989, 11).

This informality is perhaps most strikingly evident in settlement patterns. While early waves of migrants flowed into the old neighborhoods in Lima's center, later arrivals found that opportunities to acquire legal shelter were few, and the spaces available to them were prohibitively expensive and substandard. Thus, they, and subsequent waves of migrants, have had little choice but to resort to "invasion" in order to secure a piece of land on which to build shelter. Such invasions, especially those that are termed "violent," are often well-organized and well-managed activities undertaken by groups with some sort of geographical or kinship ties.

Invasions have largely occurred on public land to avoid private legal action and are often undertaken with assistance from professional invaders in order to further bolster chances of success (De Soto 1989). Though the state has sometimes opposed such invasions, just as often it has turned a blind eye or even supported these settlement strategies as low-cost "solutions" to the housing problem. Indeed, once established, many settlements have affiliated themselves with state politicians, currying favors such as expedition of legal procedures or provision of services in exchange for political allegiance, obtaining a measure of legitimacy in the process (Cameron 1994; Dietz 1998; Golte and Adams 1987; Mauceri 1996; Stokes 1995).

## **B.2. Types of Settlements**

The success of initial informal settlement strategies spawned further invasions, and informal settlements have made up the bulk of Lima's expansion into the northern and southern "cones," along the Pan-American highway, as well as along the borders of the Rímac, Chillón, and Lurín valleys to the West, North-west, and South-west of the city (Golte and Adams 1987; Stokes 1995). Indeed, informal settlements, referred to today as *asentamientos humanos* (human settlements), have come to house a major percentage of Lima's residents. In 1982, it was estimated that 47 percent of the city's population lived in such areas, compared to 45.7 percent living in formal neighborhoods (the remaining 7.3 percent resided in slum areas) (De Soto 1989, 18). More recently, the National Survey of Municipalities undertaken by Peru's National Institute for Statistics and Information (INEI, Instituto Nacional de Estadística e Informática) in 1997 indicated that there were 1,980 such settlements in metropolitan Lima, with over 2.5 million inhabitants (INEI 1999b).

Over time, the settlement patterns associated with these waves of migration have resulted in three distinct spatial categories. Central Lima and other well-established clusters such as parts of San Isidro or Miraflores, where nearly all homes and businesses are connected to electric, water, and sewer systems, are known as the "modern" zones (*urbanizaciones* or *zonas modernas*). The inner peripheries of metropolitan Lima, which are generally not as well-established as the modern zones given that they have often begun as informal settlements, but which have built up formal infrastructure over the years, are known as the "popular" zones (*urbanizaciones* or *zonas*

*populares*). The outer peripheries of the city, also known as the “marginal” zones (*urbanizaciones* or *zonas marginales*), are newer settlements, generally informal in nature, which often lack basic infrastructure and services such as roads, water and sewer, and even electricity. The residents of the popular and marginal zones are often the first, second, or third generation immigrants of a rural indigenous culture (Golte and Adams 1987).

### **B.3. Housing**

For Lima’s urban poor, particularly those of migrant origin, perhaps the highest priority is to secure a house of one’s own (Lobo 1982). Upon invading an area, residents first divide the land into lots and construct makeshift shelters of reed mats, cardboard, wood, tin, or whatever other material is readily available. This marks the first step in a homebuilding process in which, over years or decades, temporary materials are replaced with more permanent materials such as cement or brick. Immediately following invasion and prior to the construction of a more permanent structure, squatters are vulnerable to both eviction and crime. It is generally necessary that someone be in or near the home at all times during this period in order to assert *de facto* property rights and protect belongings. As the squatter settlements become more established, residents perceive that they have secure tenure to their homes, including the rights to buy and sell property, even though they may not have formal title to their land.

A house not only provides shelter for family members, but can also serve as the foundation of household economic development strategies. As a house is slowly improved, it appreciates in value, increasing a household’s material wealth. The home can further serve as a business premise, as a storage space for inventory or other enterprise-related items, or rooms can be added for rental purposes, helping households to diversify and adding a steady income stream to the household economic portfolio. In this manner, the home often comes to play a central role in households’ long-term economic strategies.

## **C. The Peruvian Economy**

### **C.1. Crises and Structural Adjustment**

As the eighties began, Peru’s economy seemed to be rebounding from the crises suffered in the seventies. Unfortunately, the decade was marked by a new, and even deeper, economic crisis. Despite the early efforts of the Belaúnde administration to institute economic reforms, by 1983 the economy, hampered by high levels of military spending, increasing foreign debt, and a rising budget deficit, and rocked even further by a severe El Niño, was in a severe recession. By 1985, when Alan García took office, real incomes had declined significantly from what they were in 1972, gross domestic product (GDP) was 12 percent lower than 1980 levels, both unemployment and underemployment were rising, and inflation, at close to 200 percent, was perceived to be out of control. Though measures taken by the García administration quickly brought the economy back to positive growth, the rebound was short-lived. By 1988, the country was in another recession marked by significant decreases in real wages and hyperinflation which reached a rate of 7,650 percent annual rate in 1990 (Rudolph 1992).

Beginning in 1991, the administration of Alberto Fujimori instituted sweeping structural adjustment programs. Reforms included elimination of some restrictions on trade, initiation of a process designed to eliminate public monopolies and otherwise privatize many state-owned enterprises, drafting of new legislation governing the financial system, deregulation of capital markets, reduction of state intervention in the economy (particularly regarding price controls), increased support for the private sector, and tax reform. Some of the most far-reaching reforms, those pertaining to labor, were designed to overhaul labor regulations in order to increase competitiveness of Peruvian firms (Pinzás 1996; Saavedra and Chong 1999).

## **C.2. Inflation and Gross Domestic Product**

Reforms have had several primary objectives: to curb inflation and bring it to manageable levels of under ten percent per year, to increase international reserves, to achieve economic growth rates equal to or higher than four percent per year, and to reduce unemployment rates to less than three percent (Boloña 1996). Of these objectives, those relating to inflation and GDP have generally been met. Inflation levels have decreased consistently over the decade, dropping to four percent in 1999 (table 2.1). Growth in gross domestic product was positive from 1993 to 1997 (table 2.2). Consistent growth in global and per capita GDP combined with low inflation created a favorable environment for Lima's entrepreneurs over much of the decade of the 1990s.

Table 2.1. Inflation 1989-1999 (percentage)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Inflation	2,775	7,650	139	57	40	15	10	12	7	6	4

Source: INEI.

Table 2.2. Global and Per Capita Gross Domestic Product in Peru, 1990-1998 (1986 Base)

	GDP (US\$ 1000)	GDP Growth (%)	Per Capita GDP (US\$)	Per Capita Growth (%)
1990	20,884	-4.9	968	-6.7
1991	21,505	3.0	979	1.1
1992	21,200	-1.4	948	-3.1
1993	22,554	6.4	992	4.6
1994	25,498	13.1	1,102	11.1
1995	27,364	7.3	1,163	5.5
1996*	28,056	2.5	1,172	0.8
1997*	30,064	7.2	1,234	5.3
1998**	30,274	0.7	1,221	-1.0

Source: Webb and Fernandez Baca 1999, 679.

\*Preliminary \*\*Estimated

In the period between the two rounds of the survey, inflation was relatively low. According to INEI, the consumer price index for Lima was 136.4 in August 1997 and 150.1 in August 1999 (base 1994=100). Therefore, in the two years between survey rounds, consumer prices in Lima increased by only ten percent. Because the inflation rate between the two survey rounds was relatively low, no specific adjustments were made during the statistical analysis to account for

inflation. However, when discussing and interpreting the size of nominal changes in variables such as household income and microenterprise revenue, then the nominal change is interpreted relative to the inflation rate to derive the size of real (deflated) changes.

### **C.3. Recent Developments: The 1998-1999 Recession**

In 1998, the Peruvian economy suffered several severe shocks stemming from the El Niño phenomenon, the Asian crisis, the Russian crisis, and the Brazilian crisis which resulted in extended periods of economic contraction. El Niño's impact was particularly sharp. The fishing industry, an integral part of Peru's economy, saw output fall by 65 percent as fish stocks moved out of the country's waters. Output in the agricultural sector was affected as well, falling by two percent in first half of 1998. El Niño-related losses from damage to roads, bridges, irrigation systems, schools, urban infrastructure, buildings and homes, and interference with transport of agricultural produce and mining output are estimated to have been more than US\$1 billion (Melo 1999; United States Department of State 1999).

In late 1998, international jitters regarding emerging markets were heightened by the Russian crisis. This resulted in a reduction in external credit to Peruvian banks, spurring them, in turn, to tighten the flow of credit to the private sector. This further slowed the economy, which had just begun to recover from El Niño (Melo 1999). The recessionary periods which followed resulted in a sharp drop in internal demand (5.7 percent in the fourth quarter), making economic conditions feel like a recession to consumers, industry, and the financial sector (The Economist, 5 February, 2000).

Buoyed by strong third and fourth quarter growth in the agriculture, fishing, mining, and petroleum sectors, overall growth in GDP was only slightly negative, at -0.4 percent for 1998 (Banco Central de Reserva del Perú 2000). The urban sectors which are dominated by microenterprises, such as non-primary manufacturing,<sup>2</sup> construction, and wholesale and retail trade, however, experienced a much sharper recession which only deepened as the year ended. Non-primary industries, after showing strong (6.2 percent) growth in the first quarter, experienced contractions in the last three quarters of the year, ending with negative growth of nearly eleven percent for the last quarter (-2 percent for the year). Though the construction sector registered a scant 0.7 percent growth for the year, the sector ended the year with a dismal 9.4 percent contraction in the fourth quarter. The commercial sector fared little better, showing contractions in all four quarters and registering a 3.1 percent drop for the year.

As 1999 began, internal demand continued to drop through the first three quarters (Banco Central de Reserva del Perú 2000). This situation served only to worsen conditions in the sectors in which microenterprises are concentrated. Non-primary industry showed negative growth through the first three quarters, with contractions slowly declining from 10.6 percent in the first quarter to 3 percent in the third quarter. The construction sector fared worse, with negative growth of nearly eleven percent for the year. The commercial sector, which began the year with a contraction of 5.1 percent, slowly moved into the black, registering positive growth of 2.7

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<sup>2</sup> Non-primary manufacturing is manufacturing which does not transform primary resources such as fish, ore, sugarcane, and petroleum.



percent for the fourth quarter, though the growth for the year was still negative, at -1.6 percent. The service sector was stagnant in both years, with growth of only 0.5 percent in 1998 and 1.2 percent in 1999.

These figures paint a grim picture for Lima's microentrepreneurs. The same sectors in which microenterprises had thrived throughout the mid-nineties, fueling economic growth and buoying global GDP, were in trouble in 1998 and 1999. Recession and low internal demand, conditions that translate into low sales and low profits, were most severe in the sectors comprised of the small businesses that are perhaps the least resistant to inclement economic conditions.

#### C.4. Poverty

The structural adjustment process seems to have had positive impacts on poverty levels in Peru. According to the Living Standards Measurement Survey (LSMS) undertaken by the Cuanto Institute,<sup>3</sup> poverty levels in Lima have declined over the decade, with 35.5 percent of the population living below the poverty level in 1997 as opposed to 47.6 percent in 1991 (table 4.3). The percentage of the population which is classified as extremely poor has dropped over the same period, from 10.1 percent in 1991 to 2.4 percent in 1997 (Webb and Fernandez Baca 1999, 535).

Table 2.3. Distribution of Population by Poverty Lines, Metropolitan Lima (percentage)

Poverty Level	1991	1994	1997
Non-poor	52.4	57.6	64.5
Poor	47.6	42.4	35.5
Non-extreme	37.5	36.9	33.1
Extreme	10.1	5.5	2.4

Source: Webb and Fernandez Baca 1999, 535.

Recent economic growth and job creation have contributed to the decrease in poverty. The World Bank (1999) reports that although the majority of jobs created from 1994 to 1997 were found in the informal sector, such jobs are not necessarily low-paying ones. That the highest growth in employment was seen in the construction, commercial, and agricultural sectors is important to note, because these are the sectors in which workers are more likely to be poor. Thus, it is likely that the creation of jobs, albeit the majority of them in the informal sector, has contributed to the recent reduction in poverty.

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<sup>3</sup> The Cuanto Institute (Instituto Cuanto S.A.) is a private research firm, located in Lima, that specializes in the collection and analysis of survey data and is responsible for establishing Peru's official poverty line and periodically measuring, through the Living Standards Measurement Survey (LSMS), the position of Peru's households relative to that line. The poverty line is constructed from expenditure data and is set at the level of income needed to purchase a minimal basket of food and other basic consumer goods. The line for extreme poverty, which is lower than the poverty line, is based on the amount of income needed to purchase a nutritionally adequate and culturally appropriate diet.

### **C.5. Employment**

Though the structural adjustment process seems to have had positive impacts in certain areas, the employment situation in Peru has yet to improve significantly. While in 1991 Peruvians ranked unemployment as the third most important problem facing the nation after inflation and terrorism, by the mid-nineties unemployment was ranked as the most pressing problem (Saavedra 1998). Unemployment is a persistent problem, but underemployment is more pervasive. While unemployment levels have hovered between 6 and 10 percent since 1980, levels of adequate employment dropped from around 60 percent in 1987 to 20 percent in 1990, while sub-employment rose to nearly 80 percent. This drastic reversal was due to a severe contraction of the economy, which caused businesses to close and forced laborers into the informal sector (Thomas 1999). The nineties have seen lower unemployment levels (around seven percent) but sub-employment levels, at over 40 percent, have remained high (table 2.4).

Table 2.4. Urban Employment Levels<sup>1</sup>

Employment Status	1995	1996	1997	1998
Adequately Employed	50.0	50.4	50.5	48.3
Sub-employed	42.4	42.7	41.8	44.1
Unemployed	7.6	7.0	7.7	7.6

Source: Webb and Fernandez Baca 1999, 568.

<sup>1</sup> Corresponds to the third trimester of each year.

### **C.6. Informal Sector Employment**

In the face of such high levels of unemployment and underemployment, the informal sector has expanded significantly. Much as with housing, migrants and their children found a reluctance on the part of the established order to allow them to integrate economically into urban society. When migrants and other new entrants into the workforce found it difficult to find work in the formal sector, many established small businesses both in order to survive and in hopes of turning them into successful businesses. Others sought work in these small businesses.

Too often, entrepreneurs found that in order to establish a legal business they were obligated to complete reams of paperwork and meet a diverse array of requirements for many different government agencies. The cumbersome process was simply too complex, time consuming, and expensive for the typical entrepreneur. Thus, to simply survive in the face of such institutional barriers, they often had to operate outside of the law. Over decades, this has resulted in the growth of a massive informal sector consisting of independent workers and very small enterprises which is marked by a culture of non-compliance with official procedures and regulations (De Soto 1989).

If institutional factors spurred the growth of the informal sector in the decades prior to the 1980s, economic factors helped to solidify its place in the Peruvian economy. Through the sharp recessions of the eighties and the structural upheaval of the nineties, the informal sector has come to provide the majority of employment in Metropolitan Lima. From 1991 to 1997, public sector employment was reduced drastically due to budget cuts and the sale of state-run companies, declining at an annual rate of six percent and reducing the public sector's share of

total employment from 17 percent in 1987 to seven percent in 1997 (table 2.5). In addition, from 1986 to 1992 formal private sector employment grew very little.

Table 2.5. Employment Distribution Between Formal and Informal Sectors in Lima, 1987 - 1997

	Formal				Informal
Year	Private	Public	Other	Total	Total
1987	24.7	17.2	17.2	46.9	53.1
1989	23.9	16.9	16.9	47.3	52.7
1990	21.5	15.3	15.3	43.2	56.8
1991	23.4	13.7	13.7	44.8	55.2
1992	21.6	12.3	12.3	40.7	59.3
1993	23.6	12.0	12.0	46.5	53.5
1994	26.0	10.3	10.3	46.2	53.8
1995	23.5	10.0	10.0	44.5	55.5
1997	23.8	7.1	7.1	42.2	57.8
Average Annual Growth Rate					
1986-92	0.4	-3.3	n/a	-0.4	2.6
1993-97	5.1	-8.1	n/a	2.3	6.9

Source: Saavedra et. al. 1998, 24.

As a result, Lima's informal sector grew quickly, peaking at nearly 60 percent of total employment in 1992. After 1992, as economic and labor market reforms began to take effect, formal private sector employment began to grow again. Growth in the informal sector, however, was greater, averaging seven percent between 1993 and 1997 versus five percent in the formal private sector and two percent for the formal sector overall.

This trend is important in that it demonstrates the significance of microenterprises and independent work in the generation of jobs. Microenterprises represent the most dynamic engines of job creation within the informal sector (Pagés 1999) and their importance continues to grow despite reforms.

## **D. Microenterprise in Peru and Lima**

### **D.1. Size and Characteristics of the Microenterprise Sector**

As discussed above, unemployment and underemployment, particularly in the formal sector, has been a chronic problem in Peru for more than a decade. Since structural adjustment of the economy was initiated in 1989, public sector employment has been reduced significantly while formal private sector employment has grown slowly. As a result, many of the workers dismissed from the public sector as well as new additions to the economically active population have turned to self-employment in microenterprises as an alternative livelihood strategy. Indeed, even though Peru's economy showed impressive growth over the last decade, spurring the creation of a half million new formal private sector jobs between 1994 and 1997, jobs in the informal sector,

often in microenterprises, increased by more than 800,000 over the same period (World Bank 1999, 32).

Microenterprises, which in Peru are officially defined as businesses with ten or fewer workers, annual sales of US\$50,000 or less, and fixed assets of US\$200,000 or less,<sup>4</sup> are a ubiquitous feature of the Peruvian economy. In 1994, data from the LSMS indicated that 57 percent of all households had at least one microenterprise or independent income-generating activity (Cuanto Institute 1994).

Since a large proportion of microenterprises operate informally and are not registered with entities such as municipalities and ministries, it is difficult to judge the actual size of the sector. Nevertheless, data from the third National Economic Census, undertaken by INEI in 1993, indicated that microenterprises then comprised the vast majority (around 95 percent of surveyed establishments) of the total number of enterprises in Peru (ILO 1998, 179; Villarán 1998, 86). According to the same survey, over 35 percent of all microenterprises and 62 percent of the largest microenterprises (between 5 and 10 employees) were located in the Department of Lima (ILO 1998, 179). In terms of employment, INEI's 1996 National Survey of Households indicated that 4,355,166, or 66 percent, of the urban economically active population were employed in enterprises with nine or fewer employees (Cuanto 1999, 887).

Peru's microenterprises are generally associated with three sectors: commercial, industrial, and service. Commercial sector activities most often involve the sale of comestibles, with individual enterprises often specializing in the sale of packaged or otherwise non-perishable food and drink, fresh foods such as fruits and vegetables or meats, or prepared foods. Other significant trade activities are the sale of clothing and footwear. In the industrial sector, perhaps the most prevalent activity is the production of clothing, with woodworking, metalworking, printing, and shoemaking comprising other important areas of production. Restaurants and other sales of prepared foods make up a large proportion of service sector enterprises, while construction, transportation, repair (auto, electronics), personal, and laundry services are also prevalent (Villarán 1998).

Many microenterprises are operated out of entrepreneur's homes. This is not surprising, given that approximately 75 percent of Peruvian families own their own home, which often constitutes their primary asset. Such home-based enterprises range from rental rooms, to small grocery stores, to small manufacturing businesses. Interestingly, a recent World Bank study noted that the operation of home-based businesses seems to be a successful economic strategy in that households with such businesses were 30 percent less likely to be poor than those households which did not use part of their home for income generating activities (World Bank 1999, 25).

#### **D.2. Factors Affecting the Microenterprise Sector**

The last decade brought numerous challenges and opportunities to the microenterprise sector. From an institutional standpoint, perhaps the most significant has been a push from both state and local authorities to bring informal enterprises into the formal sector. Social and economic

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<sup>4</sup> The official definition includes both agricultural and non-agricultural enterprises.

factors, such as crime and macroeconomic conditions, also impact entrepreneurs and their enterprises.

#### ***D.2.a. Reforms and Formalization***

Institutional reforms, many of which have had as their objective the integration of informal businesses into the formal economy, have affected the microenterprise sector over the past decade. This trend is viewed by some as positive as it implies a recognition and validation of the microenterprise sector as a legitimate and integral part of Peru's economy. Others, particularly those who operate small, informal businesses, have viewed reforms with ambivalence or antipathy.

In the early 1990s, only an estimated 34 percent of microenterprises were participating in the business tax system (Webb and Fernandez Baca 1996, 724). Thus, one of the earliest reforms was related to business taxes. In 1990, a "single unified registry" (*Registro Unificado*) was established which simplified the process of registering a firm with the tax authority and other state entities and licensing by municipalities (ILO 1998). Soon after, the Superintendency of Taxes (SUNAT) was created, and a new tax regimen was established which required all businesses to register with a "Unified Taxpayer Registry" (*Registro Único de Contribuyentes*). The new system greatly facilitated the registration process. At the same time, SUNAT established enforcement and disciplinary mechanisms; random checks increased the chance that non-compliance would be detected and substantial fines were levied in such cases (Saavedra and Chong 1999).

Following initial legislation related to the tax registry, a series of tributary regimens were established in an attempt to facilitate compliance on the part of microentrepreneurs. Four primary regimens, the "General Sales Tax" (*Impuesto General de Ventas*), or IGV, the "Unique Simplified Regimen" (*Régimen Unico Simplificado*), or RUS, the "Special Regimen of Taxable Income" (*Régimen Especial del Impuesto a la Renta*) or RER, and the "General Regimen of Taxable Income" (*Régimen General de Impuesto a la Renta*), are applied depending on status and income levels of individual microenterprises (ILO 1998).

These systems, though they are designed to make the tributary process less complex for owners of small businesses, are still confusing for many, making full compliance difficult. The RUS, for example, has undergone many modifications since its inception in 1994. For microentrepreneurs, keeping up with rapidly changing legislation is difficult and costly. Though the threat of audit by SUNAT is very real (45 percent of respondents in a ADEC-ATC/ILO survey reported at least one visit over the previous 12 months), the costs of hiring a tax specialist or deciphering the tax code by themselves provide strong incentives to simply evade paying taxes. According to the ADEC-ATC/ILO survey, respondents generally state that SUNAT visits businesses "only to tax them or close them," neglecting to provide the support or training that entrepreneurs need in order to comply. A majority of respondents also stated that high tax rates make it difficult to build up their businesses (Chavez 1998, 192; Yañez 1998, 48).

At the municipal level, though taxes are not levied directly (they are levied through the state), microenterprises are subject to a range of fees that are determined by municipalities at their

discretion. Municipal inspections of businesses are common, and many such inspections result in solicitation of either fees or “contributions” for an array of services, all of which are expenses over and above the required municipal license fees (Yañez 1998; Luna Victoria 1998). In sum, although recent reforms have attempted to facilitate the incorporation of microenterprises into the formal economy, microentrepreneurs still find it difficult to comply with what continue to be a bewildering array of regulations and requirements at both the state and municipal level.

Further, in recent years many municipalities have cracked down on mobile businesses that conduct sales from carts or makeshift kiosks in public thoroughfares, enforcing legislation that prohibits such activities. Major expulsions of street vendors occurred under Mayor Andrade in central Lima in 1996-1997. The Andrade administration’s policy of clearing microenterprises from the sidewalks and plazas of Lima’s central historic district met the approval of the general public, who had complained that the congested streets invited pickpockets and were unsafe for families. Several other municipalities in the modern and popular zones have followed the lead of central Lima and have cleared congested public areas. Official notice is usually provided well in advance of these forced expulsions, leading many vendors associations to raise funds and locate alternative market sites where they can have secure tenure. In many cases, the municipalities have worked with the vendors associations to identify and purchase alternative market sites.

In the past, small businesses were informal because the cost of becoming formal was prohibitive. Now that the tax system has been reformed and simplified, labor laws relaxed, and government pressure to conform increased, the costs of remaining informal and the costs of becoming formal have come closer together (Saavedra and Chong 1999). Now that the process is less difficult, it has become a more attractive option for businesses, particularly for larger and more visible ones. For them, formalization means that entrepreneurs do not have to worry about sanctions for non-compliance. Nevertheless, the costs associated with formalization, particularly the tax burden, are still a major disincentive. Many entrepreneurs still prefer to risk occasional fines or even forced closures rather than pay a portion of their already small profits into a system that they see as unfair, hard to understand, or even corrupt.

#### ***D.2.b. General Conditions***

Crime and corruption can be significant factors in the lives of microentrepreneurs. A 1997 survey revealed that 32.4 percent of Lima’s residents were victims of a crime in 1997. Nearly 70 percent of Lima’s households had at least one member fall victim to a crime in that same year (INEI 2000). In 1998, security was the problem most often cited as one of the three principal problems facing Lima (Webb and Fernandez Baca 1999, 1270). The crime rate has both direct and indirect impacts on entrepreneurs. Even if losses are not incurred from an actual crime, microentrepreneurs must expend time and money finding adequate and secure storage for inventory, moving to a fixed location, installing metal or barred doors, or taking other measures to ensure that their investments are safe. Entrepreneurs may also face corruption. Also in 1998, another survey showed that corruption and bribes were viewed as one of the principal problems facing the nation by 36 percent of respondents (Webb and Fernandez Baca 1999, 1269). Municipal inspections often result in solicitation of illegal bribes (*coimas*), which further tax entrepreneurs’ scarce resources (Yañez 1998; Luna Victoria 1998).



In summary, microentrepreneurs must, on virtually a daily basis, face and overcome economic, institutional, and social hurdles and challenges. They are among the first to feel the effects of changes in macroeconomic conditions, such as the recessionary effects felt on the heels of the 1998 El Niño. They must also expend energy both avoiding crime and steering clear of the authorities.

Despite the difficulties that microentrepreneurs face, their numbers are still growing and their small businesses continue to play an important role in the economy. At the same time, support programs for the sector, both state and private, are multiplying. Of the services available to microentrepreneurs through Peruvian and international support organizations, perhaps the most prevalent are microcredit services.

### **D.3. Sources of Enterprise Credit**

In general, microentrepreneurs in the metropolitan Lima area can access some kind of informal or formal credit. Informal sources include friends and relatives, product suppliers, moneylenders, and rotating savings and credit associations (ROSCAs). Formal sources include banks, EDPYMES, cooperatives, NGOs, and government entities.

#### ***D.3.a. Informal Sources***

Informal sources of credit generally fall into four categories: 1) friends and family, 2) moneylenders (known locally as *usureros* or *prestamistas*), 3) supplier credit, and 4) rotating savings and credit associations (ROSCAs). The first two categories probably do not represent significant sources of microenterprise credit. Rather, microentrepreneurs likely resort to these sources only for emergencies or short-term, high-margin investment activities. Loans from family and friends, particularly if they are interest free, might entail a social debt to be repaid in the future. Such future obligations might act as a disincentive to such borrowing activities. Moneylenders, who charge very high rates of interest, are often lenders of last resort. When an entrepreneur's capital has been drained due to emergency expenses or other reasons, he or she might borrow from a moneylender in order to purchase inventory. Moneylenders might also be used if a particularly profitable opportunity presents itself. The high interest rates, however, discourage the regular use of moneylenders as a source for microenterprise credit.

Supplier credit is increasingly available to larger commercial-sector microenterprises and to certain other subsectors, with distributors often delivering merchandise directly to the enterprises. In general, supplier credit, which takes the form of inventory, is offered interest-free, but for brief periods of time, usually five to thirty days. The utility of supplier credit varies with the conditions of individual microenterprises and the terms provided by suppliers. The prices of goods supplied on credit are often slightly higher than the prices that can be found through cash purchases in wholesale markets or from producers. If an enterprise is located some distance from wholesale markets and lacks efficient means to transport purchased products, delivery of goods on credit, even if they are more expensive, may represent a savings to the entrepreneur. Even if the supplier does not deliver merchandise, the slightly higher price that an entrepreneur pays for goods on credit may be an attractive alternative to banks or moneylenders.

Thus, depending on an individual entrepreneur's circumstances, supplier credit can play an important role in the overall financial management of an enterprise.

The local forms of ROSCA, known as *juntas*<sup>5</sup> or *panderos*, appear to play an important role both as a financing mechanism for purchase of inventory and as a means of saving for large expenses such as home improvement, high-value household goods, enterprise fixed assets, or even loan payments. These ROSCAs, which take several forms, are an integral part of financial management strategies for many entrepreneurs. Interestingly, the ROSCA is sometimes used in tandem with formal sources of credit. In some cases, ROSCA distributions might be used to augment credit from formal sources in order to increase purchasing power. In others, the distribution might be used to pay off formal loans. Thus, particularly in cases where the ROSCA provides flexibility in selection of disbursement dates, it is used to help meet the changing savings and credit needs of participants.

### ***D.3.b. Formal Sources***

Formal financial institutions include cooperatives, EDPYMEs, and formal banks. All formal financial institutions are regulated by the national bank superintendency. EDPYMEs represent an intermediate stage between unregulated nongovernmental organizations (NGOs) and regulated savings and loan institutions and banks. To register as an EDPYME, a lending organization must have US\$260,000 in capital and satisfy periodic requirements for financial reporting. By contrast, to qualify as a savings institution or as a bank, an organization must demonstrate capital amounts of US\$2,600,000 and US\$5,600,000, respectively. The only EDPYME as of October 1996 was CREDIMPET. However, the bank superintendency received 20 applications from potential EDPYMEs in 1997.

The primary alternative to ACP/Mibanco credit is microenterprise credit offered by private banks. Over the last several years, several banks have established microenterprise credit programs in metropolitan Lima. Such banks have attempted to replicate the ACP/Mibanco lending approach very closely, using the same eligibility criteria. Notable among these banks, in terms of entry into microenterprise lending, are Banco de Trabajo and Banco de Crédito. Other newcomers are BancoSur and Serbanco. Their credit terms are similar to ACP/Mibanco's and they are expanding rapidly. Such banks are considered by ACP/Mibanco to be their primary competition for microenterprise borrowers.

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<sup>5</sup> A *junta* is voluntary association of (usually) between ten and thirty people in which each person agrees to make a weekly fixed payment over a predetermined period of time. They are typically held among people who share some type of social bond. The group may be made up of merchants from the same market or residents of the same neighborhood. As trust is an important part of the ROSCA, the common bond between group members is normally a prerequisite for successful operation. People join a *junta* in order to assemble a lump sum of money. Generally, a lottery determines the order in which the participants will receive the weekly disbursements. The person who receives his or her payment in the first week receives, in effect, a no-interest loan. Everyone else receives a mixture of loan and savings, while the person who draws the payment in the last week ends up participating in a no-interest savings plan.



Nongovernmental organizations (NGOs) represent another significant source of microenterprise credit. Three of the most important NGO lenders are CARE, Manuela Ramos, and Alternativa. Other NGOs, such as FINCA, have a limited, but growing presence in the facilitation of communal bank<sup>6</sup> financial services. NGOs tend to focus their efforts on the peripheral areas of Lima. However, the NGO presence in the peripheral areas is much lighter and more scattered than that of ACP/Mibanco.

Lima's low-income residents also have access to credit for consumer durables and home improvement. The criterion for consumer credit is often a salary. Consumer credit is available through several banks, as well as through the CARSA program, operated by Banco Orion. The CARSA program specializes in selling consumer electronics and home appliances directly to clients on a credit basis. With the stabilization of inflation, some equipment suppliers have begun to provide credit to some of the larger, more established microenterprises for the purchase of fixed assets.

In mid-1997, Banco Orion opened a second program, KARPA, which extends in-kind loans for home building materials such as bricks and cement. The average loan size is US\$500, and loans are extended for a two-year period. Once approved for a loan, the client can go to one of KARPA's 40 warehouses to receive the building materials. As of July 1998, it was estimated that the combined KARPA and CARSA programs serviced 300,000 clients with a loan portfolio of US\$150 million.<sup>7</sup> Banco de Materiales, a government-run program, also provides in-kind loans in the form of construction materials. Loans are relatively long-term, with small monthly payments which put them within the reach of low-income households. Such loans can be beneficial to microentrepreneurs in that they can be used to add space for an in-home business, improve an already existing business premise, or add rental rooms.

Clearly, the financial management options available to Lima's entrepreneurs are increasingly varied. In addition to traditional, informal credit and savings instruments, supplier credit is an option that microentrepreneurs can use to purchase inventory without large quantities of capital on-hand. Consumer durables and enterprise fixed assets can be purchased on time. Savings services are available, to at least a portion of the population, through commercial banks, credit cooperatives and communal banks. Housing improvements can be financed through both private and government-led in-kind lending schemes. Finally, and perhaps most significantly, Lima's residents are now increasingly able to access working capital credit through formal sources such as banks and NGOs.

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<sup>6</sup> Communal banks are locally managed savings and credit associations. They combine internal and external sources of capital to support the economic activities of their members and help them to build assets in the form of savings.

<sup>7</sup> Information on KARPA and CARSA programs was provided by Manuel Cardenal, Finance Manager for Banco Orion, in a personal interview with William Matthews on July 22, 1998.

## **E. ACP/Mibanco Microcredit Program**

### **E.1. History and Evolution of ACP/Mibanco**

Founded in January 1969, Acción Comunitaria del Perú (ACP) began with community development projects focusing on community organization, community education, urban infrastructure and homebuilding, and small business technical assistance. The mission of ACP was to promote the development of the segment of the Peruvian population that has the most limited resources. Since 1982, ACP has focused on supporting microentrepreneurs. It inaugurated its microenterprise credit activities in 1982 under the Progreso Program and opened its first lending office in San Juan de Miraflores, a heavily populated area in Lima's southern cone.<sup>8</sup> The Inter-American Development Bank provided initial grants to ACP in 1983 and 1985. In 1985, ACP opened its second field office in Rimac, another heavily populated area outside the central city, and began lending to microentrepreneurs in Lima's northern cone.

The fifteen-year history of the lending program between 1982 and 1997 can be roughly divided into three five-year segments. There was steady growth between 1982 and 1986, with a peak in the number of clients and amount loaned in 1986-87. During the period between 1987 and 1991, ACP experienced a steep decline in its client base and loan portfolio due to the hyperinflation and structural adjustment in Peru. During this time, the proportion of loans for enterprises in the production sector dropped sharply. ACP survived the economic crisis by streamlining itself, operating with a minimal staff and a small number of clients. Beginning in 1993 and continuing to the present, ACP/Mibanco's client base and loan portfolio have grown dramatically. This growth trend is demonstrated in table 2.6.

At the time of the baseline survey, ACP had 13 field agencies and a central management office. It was headed by an executive director who worked with a small number of central office executives and reported to a board of directors. The manager of each of the field agencies reported to the central office. Each field agency had a manager, credit agents, credit assistants, and clerical staff. A credit committee at each agency, composed of the agency's manager and the credit agents, met daily to make loan decisions. In general, the credit agents held a bachelor's degree in economics, business administration, or engineering. Each credit agent was serving approximately 270 borrowers at the time of the baseline survey.

When the baseline survey was conducted in August 1997, ACP had approximately 30,000 active clients, spread across metropolitan Lima. Approximately 61 percent of ACP's clients were females and 39 percent were male. The largest number of clients were in Lima's heavily populated northern and southern cones, with 24 and 34 percent of the total client base, respectively.<sup>9</sup> At the end of 1997, the value of loans outstanding in the ACP loan portfolio was

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<sup>8</sup> Lima's "cones" refer to the city's post-1940 urban expansion north, south, east, and west of the city's center primarily along the main transportation routes from Lima. See part B (earlier in this chapter) for a description of metropolitan Lima's settlement patterns and see chapter III (figure 3.1) for a map of Lima indicating the research sites for the study.

<sup>9</sup> The next largest number of clients were in the eastern cone (21 percent), followed by central Lima (11 percent), and the western cone (10 percent).

S/34.3 million (US\$12.9 million) and the average loan size was S/1,021 (US\$384). The only financial services offered by ACP/Mibanco were working capital loans, which are described in more detail below.

Table 2.6. Growth in ACP/Mibanco Loan Portfolio, 1993-1999

	ACP			MIBANCO
	1993	1995	1997	1999
Number of loans outstanding, end of year	4,560	19,120	33,549	41,344
Amount of loans outstanding, end of year (S/1,000)	2,209	17,757	34,257	67,073
Average loan size (soles)	484	929	1,021	1,622

Source: Activity and financial statements provided by ACP/Mibanco.

An activity and financial statement for ACP/Mibanco is provided in appendix 1. The organization turned an accounting profit, with positive returns on operations in each of the years covered in the financial statement (1995-1999). Despite the rapid growth in the loan portfolio, the long-run loss rate remained low and was 1.75 percent in 1997. At the end of December 1997, ACP had just over 33,000 loans outstanding and a portfolio-at-risk of 5.4 percent.<sup>10</sup>

During the year of the baseline survey, ACP was preparing for dramatic organizational changes. At the beginning of 1997, ACP was in the process of preparing the required documents to transform its credit operation into a type of regulated financial institution known as an *EDPYME*. Instead, in August 1997, there was a highly publicized announcement about plans to open a new private bank to serve Lima's microentrepreneurs. The new private bank was to be called *Mibanco* ("my bank"). With a 60 percent share in Mibanco, ACP was to become the majority shareholder. Other shareholders included Profund, an international financial investment firm headquartered in Costa Rica, with a 20 percent share, and Acción Internacional, Banco Wiese, and Banco de Crédito, each with almost seven percent shares.

In May of 1998, Mibanco was officially opened. The successful transformation from ACP to Mibanco required significant organizational effort.<sup>11</sup> The clients of ACP automatically became the clients of Mibanco, creating the new bank's initial client base. In addition, the credit-related personnel and field credit agencies of ACP became the personnel and infrastructure of

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<sup>10</sup> The long-run loss rate is calculated by dividing the value of loans written off during the year by the total value of loans outstanding. The portfolio at risk is calculated by dividing the principal balance of loans with one or more payments over 30 days past due by the total value of loans outstanding.

<sup>11</sup> For a more detailed discussion of the transformation from ACP to Mibanco, see chapter 6 of Campion and White (1999).

Mibanco.<sup>12</sup> In the transition from ACP to Mibanco, clients experienced few changes, and the basic lending approach remained essentially the same.

After its official opening, Mibanco continued to grow and evolve. Aggressive marketing and rapid expansion spurred a sharp rise in client numbers. As of February 2000, Mibanco had expanded to 22 agencies across Lima and had opened its first credit agency outside of the capital (in Chincha). By June 2000, the bank had 46,935 current clients. On a cumulative basis between June 1998 and June 2000, Mibanco had disbursed a total of 241,935 loans worth US\$134 million, and had a reported 30-day delinquency rate of 1.4 percent (Mibanco 2000).

## **E.2. ACP/Mibanco Microcredit Program**

Over the period of the study, ACP/Mibanco offered only working capital loans, with the loan size starting at S/300 (approximately US\$100).<sup>13</sup> Maximum loan size was determined on an individual basis according to an evaluation of the capacity of the enterprise to use working capital and the repayment record of the borrower. Typical loan length ranged between six weeks and four months, with a maximum loan length of 12 months. Payments were made on a weekly, biweekly, or monthly basis, depending on the terms of the particular loan. The interest rate on working capital loans started at around 50 percent annually and was based on market rates. Daily late fees were assessed on delinquent payments.

In 1997, ACP/Mibanco working capital loans were delivered under two modalities: 1) solidarity group credit; and 2) individual credit. Solidarity group credit was the dominant modality over the earlier history of the ACP/Mibanco lending program. A solidarity group consisted of two to five people, with at least one group member owning his or her own home. Group members were self-selected and formed immediately prior to applying for the first credit in order to act as co-signers for each other. Group members distributed the loan and collected payments amongst themselves, and often rotated the responsibility of going to ACP/Mibanco to collect checks or make payments. Individual loans, which had become more prevalent at the time of the study, were offered in two types: with or without a co-signer. Individual loans with a co-signer required that the co-signer own a home. To receive an individual loan without a co-signer, the borrower was required to be a homeowner.

At the time of the baseline survey, the solidarity group and individual loan modalities accounted for approximately 47 and 53 percent of loans, respectively. The solidarity group modality, however, was declining in popularity among borrowers, because of both transaction costs and inflexibilities associated with group loans. Many borrowers did not want to incur the transaction costs associated with coordinating disbursement and payment collection among group members. In addition, many borrowers preferred not to depend on the repayment performance of others,

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<sup>12</sup> The nongovernmental organization known as ACP continued to exist after the transformation. However, it no longer operated a microfinance program and it functioned with a smaller staff and reduced infrastructure. The new ACP focuses on non-financial business development services.

<sup>13</sup> After the final data for the study were collected, Mibanco added a loan product for the purchase of fixed assets and a fixed-term savings product.

and some felt constrained by having to follow the borrowing timetables of the group rather than repaying and taking a new loan as their own needs dictated. Thus, over the two years between surveys, individual loans increased in number relative to solidarity group loans.<sup>14</sup>

ACP/Mibanco provides loans to microentrepreneurs in the commercial, service, and industrial sectors. In 1997, the bulk of ACP/Mibanco clients (80 percent) had commercial enterprises. The typical ACP/Mibanco client was a woman who sold staple groceries and dry goods (*abarrotes*) either from her home or from a market stall. Other common commercial enterprises include the sale of produce, meats, clothing, shoes, or small electronics. The services sector was the next largest recipient of credit, comprising about eleven percent of ACP/Mibanco clients. Typical activities in the service sector include the sale of prepared foods, transportation, shoe and appliance repair, and beauty salons and barber shops. Industrial sector entrepreneurs, who made up only nine percent of ACP/Mibanco clients, engage in production activities in the industrial sector such as carpentry, sewing, shoemaking, and artisanry.

The heaviest lending seasons correspond to the busiest seasons for microenterprises, which are the periods leading up to the July and December (Christmas) holidays. In July, Peru celebrates its national holiday, and salaried workers receive an extra paycheck. The next busiest time is during March and April, when parents purchase school supplies for their children. Sales in May and June are slightly above average for commercial microenterprises because of Mother's Day and Father's Day.

### E.3. ACP/Mibanco Credit Process

The process that ACP/Mibanco followed in extending credit between 1997 and 1999, which was the same for all modalities, can be described in terms of four stages: 1) advertising; 2) credit qualification; 3) administrative process; and 4) portfolio management. The actual length of time between the client's initial application and receipt of the credit check was normally five working days or less (this information was verified with clients). Applications for second and subsequent loans were highly simplified and could be approved immediately. A potential client was required to present his or her application at the field credit agency serving the geographic area in which the microenterprise was located.

Advertising. Clients usually heard about ACP/Mibanco through word-of-mouth advertising, through ACP/Mibanco flyers, or, more recently, through major media advertising campaigns. In the beginning of the study period, clients' initial formal contact with ACP occurred when he or she attended an informational talk, or *charla*, held every afternoon at each field credit agency. By 1999, ACP/Mibanco no longer held these informational talks. Instead, potential clients inquired at the field credit agencies, where a customer service representative provided information on credit requirements, credit terms, and the application process.

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<sup>14</sup> By June 2000, nearly one year after the second-round survey, individual borrowing had eclipsed solidarity group borrowing as the dominant modality, accounting for 89 percent of all loans, and 92 percent of money lent (Mibanco 2000).

Credit Qualification. Potential clients were required to have a functioning enterprise that had been in operation for more than six months, since ACP/Mibanco did not finance start-ups. The client presented the following information at an ACP/Mibanco field credit agency: 1) pre-credit application, 2) copy of national identity card (*libreto electoral*), 3) proof of business, 4) copy of receipts for an electricity, water, or telephone bill, 5) proof of residence, and 6) proof of collateral. The pre-credit application included a list of electrical appliances that qualified as loan collateral. Eligible collateral was confined to consumer-oriented electrical appliances of sufficient value to secure a loan. ACP/Mibanco accepted a wide range of documentation for proof of business and residence. Proof of business could be a tax receipt, municipal license, letter from the market association, or receipts from suppliers. The primary objectives in requiring these proofs were to determine whether the applicant had at least six months of experience with the business and whether the applicant could be reliably located at some home address. Loans were available to only one household member.

Following the submission of the required documents, up to three types of visits were made: 1) a credit assistant visited the home of the applicant to verify the address, the existence and condition of the appliances listed as collateral, and the general living conditions of the applicant; 2) a credit agent visited the applicant's business to assess the ability of the business to absorb the working capital effectively and generate loan repayments; and 3) if there were a co-signer, a credit assistant visited the home of the co-signer. An assessment form from each of these visits was added to the application file.

The final step in the credit qualification process was the consideration of the application at the meeting of the credit committee, composed of the manager and credit agents of the field agency. The credit committee decided whether to approve the application and selected the amount and terms of the loan. The amount of credit provided by ACP/Mibanco was routinely less than the amount requested by the applicant. If the credit was approved, the loan passed to the next stage.

Administrative Process. This stage began with the input of the loan and client data into the computer by a secretary in the field credit agency. Each afternoon, the data on all loans approved that day were transferred via modem to the ACP/Mibanco central office. This stage ended when the loan check was printed and given to the borrower. The borrower could cash the check at any of the numerous Banco Wiese branches or at one of the ACP/Mibanco cashier windows.

Portfolio Management. During this stage, the credit agents monitored the loans in their portfolios. At least once before the end of the repayment period, the agent visited the borrower's business. Second and subsequent applications for credit were greatly simplified; the client would not need to provide the documentation that was required for the first loan, and home visits were not made. As long as the client repaid promptly, credit renewal was virtually automatic. An application for credit renewal could be made toward the end of the repayment period, so that a borrower in good standing could pick up a new loan check on the same day that he or she made the last payment on the previous credit. Renewal requests could be made in person at the ACP/Mibanco office, during the credit agent's follow-up visit, or over the telephone. Thus, ACP/Mibanco provided renewable credit to its clients on a long-term basis.

#### E.4. Relationship Between Credit Characteristics, Loan Use, and Impacts

The characteristics of a loan have implications for the ways that credit is used by clients and members of their households and for the types and levels of impacts that can be anticipated. The ACP/Mibanco working capital loans were generally small, repayment periods were short, and frequent payments (weekly, biweekly, monthly) were required. Interest rates were market-based and unsubsidized, making ACP/Mibanco credit relatively expensive. In addition to the interest costs, clients incurred substantial transaction costs related to the application, disbursement, and repayment processes. Client transaction costs were higher for solidarity group loans than for individual loans.<sup>15</sup>

Since loans were short-term and costly, households needed a stable source of short-term liquidity in order to keep up with loan payments. This discouraged the use of the loan for investments focused more on long-term returns, unless there were significant alternative sources of short-term liquidity within the household economic portfolio. In this way, the characteristics of the loan made it more suitable for commercial activities, since the immediate turnover of purchased inventory provides short-term profit. The implication is that this particular type of credit might be expected to have greater positive impacts on microenterprises in the commercial sector than on microenterprises in the service or industrial sectors.

Although initial loan approval was based on the existence of a microenterprise that could productively use the credit, ACP/Mibanco did not monitor how the client spent the loan after it was received. There were no penalties for using the credit outside of the microenterprise, so the client (with or without input from other household members) could decide how best to use the credit. With credit not restricted to any particular use, clients had the flexibility to allocate loans to the highest priority production, consumption, or investment activities. It is worth noting in this context that the ACP/Mibanco credit program was aimed more toward supporting the microentrepreneur than toward development of the microenterprise *per se*. Thus, it is reasonable to expect that the credit may have direct impacts within the household that extend beyond impacts that occur through the microenterprise.

Another loan characteristic with implications for credit use was the restriction that only one member of a household could be a client of ACP/Mibanco. Among entrepreneurial households in Lima, however, it is common to find more than one entrepreneur in the household, each operating a separate microenterprise. By restricting loan access to only one household member, ACP/Mibanco was actually encouraging clients in multiple-entrepreneur households to share loans. If there is more than one microenterprise, it is rational at the household level to allocate the loan funds across the enterprises in order to maximize overall returns for that loan cycle. Since households may have an economic incentive to share loans, the loan might be expected to

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<sup>15</sup> Although data were not collected on transaction costs, the authors' impression at the beginning of the study period was that the client transaction costs for ACP/Mibanco loans were generally lower than for microenterprise loans from other formal sources. By late 1999, however, this gap appeared to be closing as ACP/Mibanco became subject to regulated reporting requirements and, at the same time, other formal banks began to streamline their application processes for microenterprise loans.

have impacts on microenterprises other than the one used to qualify for the loan. Moreover, those households with the best combination of profitable production and investment opportunities may also be expected to experience the highest levels of positive economic impacts from credit.

Finally, another characteristic of the ACP/Mibanco loan that had implications for loan use and expected impacts was the renewable nature of the loan contract. As long as the client repaid promptly, he or she could receive a new loan on the same day the previous loan was repaid. Since loan renewal was virtually automatic for clients with good repayment records, the clients and their households could conduct their economic planning based on an assumption of credit access. The anticipation of continued access to this particular type of credit could help to reduce the expected risk of long-term business investments and open up more profitable alternatives for households' long-term livelihood strategies. If this is the case, then households that continue to use the credit over a longer period may be expected to experience increased positive impacts.

## **F. Conclusion**

For decades, population growth in Lima, along with institutional and economic circumstances, combined to foster the growth of the microenterprise sector. As the economy stabilized during the nineties, there was increasing recognition of the sector's importance to people's livelihoods and Lima's overall economy. With this recognition came the political will to aid microentrepreneurs, and microcredit emerged as one of the most prevalent forms of microenterprise assistance.

With political and financial backing, the number of microenterprise support organizations multiplied. As new organizational and lending approaches proved effective and profitable, some of these support organizations grew and increased their outreach. Within this environment, ACP/Mibanco evolved from a small non-profit microenterprise support organization into a profitable bank and the largest provider of microcredit in Lima.

Today, the world of microenterprise support continues to evolve rapidly. At the same time that traditional microcredit providers scale up, established formal banks are increasingly targeting the microenterprise sector as a viable market for financial products. This trend is forcing organizations to rethink strategies and evaluate new and old products as they compete for clients. On the other hand, entrepreneurs, most of whom did not have access to formal credit of any kind in the recent past, now have a range of financial products to choose from to meet their business (and non-business) credit needs. This dynamic environment has brought challenges and opportunities to both microfinance organizations and to the entrepreneurs that they serve.



## Section 3 – Study Design and Research Methods

The purpose of this study is to draw plausible inferences about the impacts of ACP/Mibanco microcredit on the clients, their enterprises, and their households. Designing an impact assessment is a challenging task, and there are several critical decision points. Unfortunately, there is no infallible approach that is guaranteed to reveal the irrefutable “truth” about the impacts of microenterprise services. Instead, there are alternative methods, each with advantages and disadvantages:

Regardless of the chosen design and the elaborateness of comparisons, however, some uncertainty about the size of treatment effects will always remain. It is impossible to rule out completely all threats to validity. Ultimately, researchers must rely on accumulating evidence across multiple designs and the corresponding multiple estimates of effects. (Reichardt and Mark 1998, 224).

The approach taken in this study is to combine quantitative and qualitative methods to reach a new level of understanding about microcredit clients, the impacts of microcredit, and the sizes of these impacts, while recognizing the limitations of each method. The key features of the research design for this impact assessment can be summarized as follows:

- The research was based on a conceptual framework of the microenterprise as embedded in the household economic portfolio.
- The data collection and analysis were designed to test a set of impact hypotheses at the enterprise, household, and individual levels.
- A mixed method approach was followed, combining survey and case study data. The survey data provide information on the direction and size of impacts, while the case study data provide insights into the processes by which these impacts occur.
- The data were longitudinal, with the survey being administered in 1997 and 1999 and the case study interviews taking place in 1998 and 1999. The same respondents were tracked over time, resulting in a panel data set.
- A formal protocol was followed in collecting the case study data, resulting in the assembly of a case study database. The database includes tape recordings and written transcripts of all interviews.
- The sample design for the survey was quasi-experimental, including both clients of ACP/Mibanco and non-clients with some similar characteristics.
- The methods used to analyze the survey data included ANOVA tests, t-tests, chi-squared tests, gain score analysis, multiple linear regression, probit analysis, and analysis of covariance (ANCOVA).

In this section, we describe the research design for the study. The first three sections provide a statement of the conceptual framework, a list of the research hypotheses, and a description of the preliminary research that guided the study design. The fourth section provides a detailed description of the sample design and survey methods. This is followed by a section describing the approaches used in analyzing the survey data, beginning with a general discussion of some of the critical issues related to the design and analysis of an impact assessment. As the discussion in this section will indicate, several statistical methods were used to analyze the survey data. The final two sections discuss the methods used in the case study analysis and the approach for integrating the survey and case study results.

## **A. Conceptual Framework**

In the conceptual model of the household economic portfolio, the household is defined in terms of three components: 1) the human, physical, and financial resources of the household; 2) the production, consumption, and investment activities of the household; and 3) the circular flows between resources and activities. These circular flows include both the decisions that allocate resources to activities and the return flow of income generated by the selected activities. This return flow of income serves to augment the set of household resources. Credit is fungible within the household economic portfolio, and, along with other household resources, may be used to help the household members implement their economic strategies by selecting the set of activities that best matches household members' objectives and constraints (Chen and Dunn 1996). For a graphical representation of the household economic portfolio model, see appendix three.

In evaluating the client-level impacts of microcredit programs, it is important to keep in mind that the microenterprise is embedded within the overall household economy. The microenterprise that receives credit is likely to be one of several income-generating activities that draw on the household's limited resources. By broadening the analysis to include the overall household economic portfolio, the impact evaluation can focus on program impacts at the household, enterprise, and individual levels, thus capturing the full range of potentially significant changes in the economic welfare of clients and their households over time.

## **B. Impact Hypotheses**

The research design was guided by a set of impact hypotheses at the enterprise, the household, and the individual (entrepreneur) levels.<sup>16</sup> In addition to being based on the household economic portfolio model, the hypotheses were developed through 1) a review of prior microenterprise impact evaluations (Sebstad and Chen 1996); 2) pilot field investigations at the three AIMS Core Impact Assessment sites in Peru, Zimbabwe, and India (Dunn 1997; Chen 1997); and 3) a series of discussions among the members of the AIMS Project team and with outside experts.

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<sup>16</sup> The majority of these hypotheses, known as the "core" hypotheses, are common across all three of the impact evaluations in the AIMS Project Core Impact Assessments. In other words, the same sets of hypotheses were used to guide the AIMS Core Impact Assessments in Peru, India, and Zimbabwe. The hypotheses that are unique, or supplemental, to Peru are hypotheses E-5 and H-7.

The impact hypotheses posit that microenterprise services lead to impacts, or changes, at the enterprise, household, and individual levels. The specific microenterprise service being investigated in this study is microenterprise credit, since ACP/Mibanco did not provide other microenterprise services over the period of the study. The use of microcredit is hypothesized to lead to the impacts listed below.

#### *Impacts at the enterprise level*

- E-1. An increase in microenterprise revenue;
- E-2. An increase in enterprise fixed assets, especially among repeat borrowers;
- E-3. An increase in the paid and unpaid employment generated by the enterprise;
- E-4. Improvements in the transactional relationships of the enterprise; and
- E-5. A higher level of entry into the business tax system (RUC).

#### *Impacts at the household level*

- H-1. An increase in the level of household income;
- H-2. Greater diversification in the sources of household income;
- H-3. An increase in household assets, including
  - (H3-a) improvements in housing,
  - (H3-b) increases in major household appliances, and
  - (H3-c) increases in microenterprise fixed assets;<sup>17</sup>
- H-4. An increase in expenditures on children's education;
- H-5. An increase in expenditures on food, especially among the very poor;
- H-6. An increase in the household's effectiveness in coping with shocks; and
- H-7. A higher level of intergenerational launching within client households.

#### *Impacts at the individual level*

- I-1. Increases in the client's control over resources and income within the household economic portfolio;
- I-2. Increased self-esteem and respect by others;
- I-3. An increased incidence of personal savings; and
- I-4. A better position from which to deal with the future through more proactive behavior and increased confidence.

## **C. Preliminary Research**

The challenges faced in the early stages of designing the study included the need to develop a better understanding of the local context through which to refine the set of hypotheses and select the most relevant context-specific variables for measuring impacts. The methods used in this

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<sup>17</sup> This household-level hypothesis refers to the total (aggregate) value of fixed assets for all enterprises in the household. The enterprise-level hypothesis (E-2) refers to the fixed assets of a single enterprise.

preliminary stage of the research included 1) individual interviews with ACP personnel, other practitioners, local researchers, and ACP clients; 2) field observations at the businesses and homes of ACP clients; 3) review of previous studies of the impact of microenterprise programs in Peru and discussions with authors; and 4) presentation and discussion of the impact variables at a seminar with ACP personnel. This preliminary research took place prior to development of the questionnaire.

In-depth interviews were conducted with approximately 15 ACP personnel, including the executive director, key individuals in the central office, the directors of seven field credit agencies, and various credit agents. In addition, interviews were conducted with leaders of other microenterprise support organizations, such as CARE, Alternativa, and COPEME.<sup>18</sup> Members of the local research community were also interviewed, including individuals from the Center for Development Studies and Promotion (DESCO), the International Labor Organization (ILO), the InterAmerican Development Bank (IADB), the local InterAmerican Foundation affiliate (SASE), the University of the Pacific, and several individuals from the University of Lima. In addition to explaining their perspectives on impacts, these researchers and practitioners also provided information on the existence and principal findings of local microenterprise studies.<sup>19</sup>

Clients of ACP were also interviewed about their perspectives on the impacts of microenterprise credit. Indirect questions and field observations were used to derive information on impact. In-depth interviews were conducted with nine clients, and brief interviews were conducted with numerous additional clients. In terms of the likely impacts of microenterprise credit, there was general consensus and broad overlap between the clients, ACP personnel, other practitioners, and researchers. The preliminary research led to a refinement of the original set of core hypotheses, and the development of supplemental hypotheses to reflect the likely impacts of microenterprise credit in the unique context of Lima. The preliminary research also provided insights into possible approaches for measuring the impact variables and led into the next stage of the research, which was the development of the questionnaire.

## **D. Survey Methods**

### **D.1. Questionnaire Development**

In order to select the most appropriate measurement approaches for the impact variables, and to refine the questionnaire, the following methods were used: 1) review of local survey instruments; 2) discussions with researchers and survey firms; 3) field tests of draft questionnaires with clients; and 4) formal pilot tests of the questionnaires. Among the local survey instruments, the

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<sup>18</sup> COPEME is the consortium of Peruvian NGOs with programs that provide support to small and microenterprises. Currently there are approximately 60 COPEME members.

<sup>19</sup> While there are numerous descriptive studies on microenterprises, there are few impact studies. Notable exceptions include the impact studies conducted on the microenterprise support programs of Alternativa (1992), CARE (1994), and SASE (1995-1996). The one existing impact study of ACP found mixed results on enterprise-level changes for clothing-related microenterprises between the first and most recent credit applications (Thomas 1988). In the absence of a control group and with data for only a few variables, the author declined to draw conclusions about impacts.

most relevant was the questionnaire used by the Cuanto Institute in its longitudinal study of the living standards of Peruvian households.<sup>20</sup> This questionnaire is the basis for the Living Standards Measurement Survey (LSMS) data for Peru and is used to establish the nation's official poverty line. This and other questionnaires were analyzed for their relevance to the hypothesized impact variables. In addition, discussions were held with the individuals responsible for the studies to determine the relative success of these questionnaires and the ease of measuring specific alternative variables.

Measurement issues were subsequently explored through a series of eight client interviews. These interviews were used to check for potential problems with the questionnaire and included testing for question format, recall ability, sensitivity issues, information accuracy, and interview length. Based on these interviews, the household-level and enterprise-level questionnaires for the baseline study were constructed. Once constructed, the complete questionnaires were field tested and revised three times. The revised questionnaires were then pilot tested on a sample of 30 households.<sup>21</sup> Based on the results of the pilot test, the household and enterprise questionnaires were finalized.

Slight modifications were made to both the household and enterprise questionnaires for the second round of the survey in 1999. Several questions were added to facilitate the tracking of enterprises and their managers. A second series of questions were directed only to those respondents who had been classified as non-clients in 1997. These questions were used to determine whether any respondents from this group had received a loan from ACP/Mibanco in the two years since the first round of the survey. All modifications to the questionnaires were field tested and revised three times before being finalized.

## *D.2. Sample Selection*

For the baseline study, a total of 701 respondents were selected, of which 400 were ACP clients and 301 were non-clients. In order to select this sample, a two-stage sampling approach was followed. The two-stage sampling approach improved the cost effectiveness of the survey, primarily through the cost savings derived from limiting the geographic coverage of the non-client sample frame. In addition, there were savings in enumerator salaries, transportation costs, and other logistical costs by confining the survey to two regions within the metropolitan area.

In the first stage, two regions in metropolitan Lima were selected, corresponding to three ACP field credit agencies. These three field credit agencies were selected because their clients were representative of ACP's overall client base. The second stage consisted of the selection of the client and non-client households on the basis of simple random sampling. The first stage, selection of the regions, is described immediately below. This is followed by a description of the second stage, selection of the households. The discussion of the second stage is divided into two

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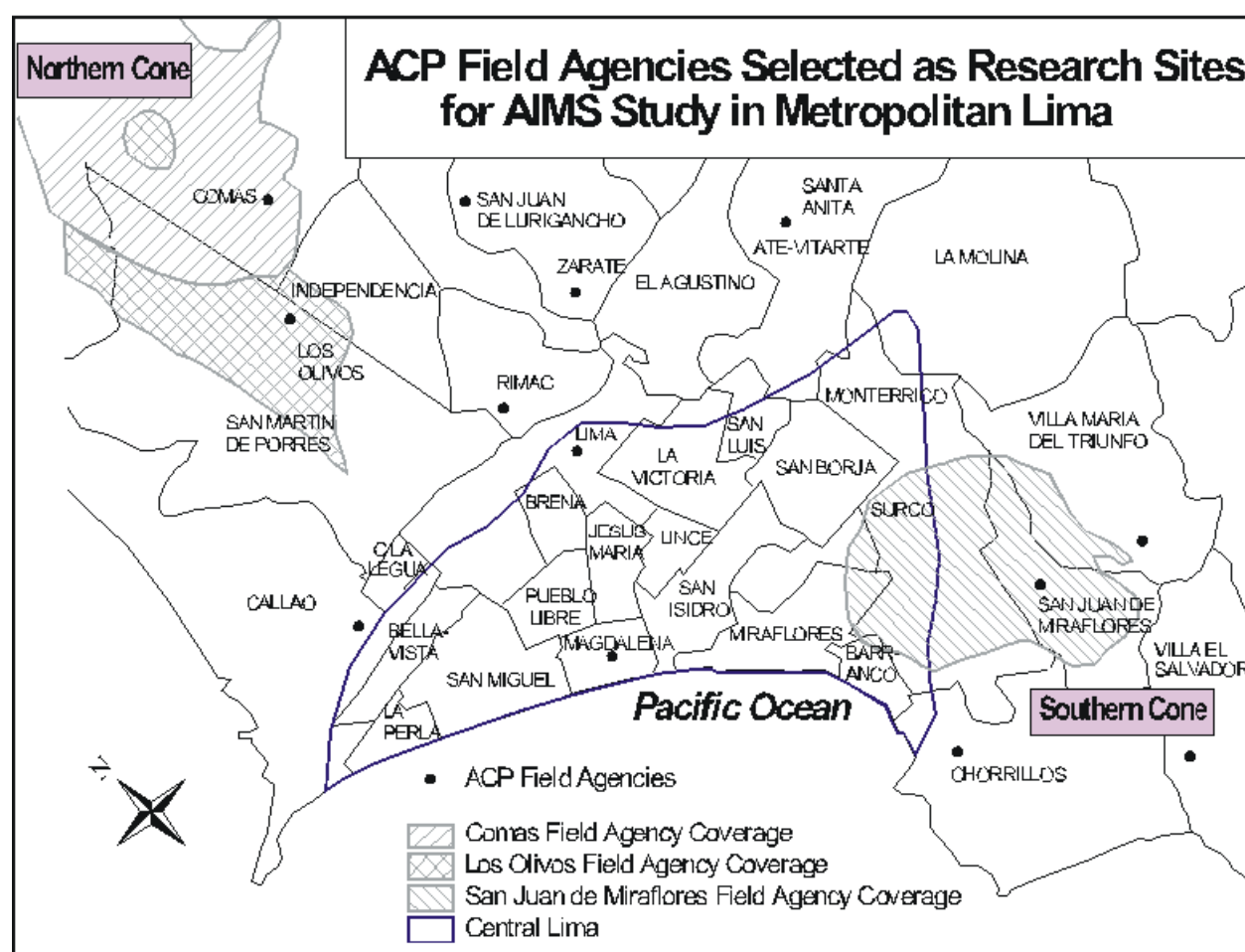
<sup>20</sup> The translated title of the survey is the "National Household Survey for Measurement of Living Standards."

<sup>21</sup> The pilot test of the questionnaires consisted of formal implementation of the draft questionnaires in the field. The pilot test was conducted in an area of Lima distinct from the areas selected for the baseline survey.

parts because different procedures were used to construct the client and non-client sample frames.

### *D.2.a. Selection of regions*

Two regions within Lima were selected as most representative of ACP's operations and the overall ACP client base. The selected sample areas are in Lima's northern and southern cones, which contain approximately 64 percent of ACP's clients. One of the selected regions, served by the San Juan de Miraflores credit agency, is in Lima's southern cone. The second region is in Lima's northern cone and is composed of the area served by the adjacent credit agencies of Comas and Los Olivos. The shaded areas in figure 3.1 indicate the location of the selected regions relative to the districts of metropolitan Lima and the locations of the 13 ACP field credit agencies that were operating during that time.



**Figure 3.1. Map of Metropolitan Lima Depicting Research Sites**

Source for base map: Acción Comunitaria del Perú Annual Report 1995.

The San Juan de Miraflores credit agency and the contiguous Comas and Los Olivos agencies were selected on the basis of several criteria. First, they contain all three of Lima's major spatial categories: modern, popular, and marginal zones. These three zones differ in their level of



commercial activity, length of settlement, average socioeconomic level of their residents, level of consolidation and infrastructure, and credit availability. Through a participatory process with ACP personnel, Lima's districts and subdistricts were classified into the three spatial categories. The two regions selected in the first stage of the sample provide substantial coverage of all three categories.

A second criterion used in selecting the two regions was their representativeness in terms of the sectoral distribution of ACP client enterprises. During the pilot-test period, ACP provided detailed information on the number and distribution of its clients. This confidential information was disaggregated by credit agency, sector, and geographic area. The sectoral distribution of clients in the selected sample regions very closely matches the sectoral distribution of the total population of ACP clients at the time of the baseline survey (table 3.1). The regions selected in the first stage of the sample contained 26 percent of ACP's entire client base in 1997. Thus, the regions selected in the first stage cover a relatively large proportion of the entire ACP client base.

Table 3.1. Number of Clients in Selected Sample Regions Compared to Total Population of ACP Clients, by Sector (1997)

Sector	Clients in Selected Sample Regions		Total Population of ACP Clients	
	Number	Percentage	Number	Percentage
Commercial	5,882	81	22,620	80
Service	782	11	3,090	11
Industrial	598	8	2,665	9
TOTAL	7,262	100	28,375	100

Source: ACP.

#### ***D.2.b. Selection of client households***

The ACP central office provided the sample frame for the client sample. The sample frame consisted of current listings of all clients in each of the three agencies. The sample was selected from the three field credit agencies using a constant sampling fraction, based on the total number of clients listed for each agency. This sampling approach created a self-weighting sample in which all clients in the selected regions had an equal probability of being selected.

The clients on each of the three lists were grouped by commercial, service, and industrial sectors. Using the client lists supplied by ACP, a random sample of clients was selected using linear systematic sampling from a randomly selected starting point. Because the lists were grouped by sector, the linear systematic sampling approach ensured that there would be sufficient enterprises selected in each sector for conducting independent analysis by sector.

The initial sample consisted of 400 clients, with an additional 60 clients selected to provide a substitution list. Names from the substitution list were used in cases where it was impossible to locate respondents, or they were unable or unwilling to participate in the sample. The overall

acceptance rate was 95 percent, which is a high response rate for social science research. The final sample included a total of 400 ACP clients, with the distribution by credit agency as follows: 131 clients in the San Juan de Miraflores agency; 149 clients in the Comas agency; and 120 clients in the Los Olivos agency.

The client sample, at 400 respondents, was larger than the non-client sample, at 301 respondents, for two reasons. First, based on the previous experience with client retention, it was anticipated that there would be relatively high client attrition between the two rounds of the survey, resulting in fewer active clients by the end of the study period. Since ACP served only a small fraction (less than five percent) of potential borrowers in the service area, it was assumed that clients were more likely to leave the microfinance program than non-clients were to become clients. Also, a larger client sample was needed to provide sufficient degrees of freedom for the analysis of subgroups of clients, such as analysis of clients by gender, sector of microenterprise, or length of participation in the credit program.

#### ***D.2.c. Selection of non-client households***

In order to construct the sample frame for the non-client sample, a pre-survey registration of non-client microentrepreneurs was conducted. A total of 4,000 microentrepreneurs were registered (table 3.2), which provided the sample frame for the random selection of 300 non-clients into the sample. The non-clients selected into the sample had the same characteristics as the client sample in terms of microenterprise location, microenterprise sector, microenterprise age, and gender of the entrepreneur. A major difference between the two groups was that the clients had received program microenterprise credit and the non-clients had not. Since this study focuses on the impact of microenterprise credit, it is important that the comparison group not have received formal or program microenterprise credit prior to the baseline.

The starting points for the non-client registration were determined by the locations of the microenterprises selected into the client sample. Beginning at each client's microenterprise, the registrar administered a brief pre-survey instrument to all neighboring microentrepreneurs in the same block (*manzana*) and adjacent blocks, completing each block, until at least ten eligible microentrepreneurs had been registered.<sup>22</sup>

Eligibility for inclusion in the registration list was determined by the answers to the questions in the pre-survey instrument and consisted of the following three criteria:

- 1) The microentrepreneur had to have a microenterprise in the same sector as the client's microenterprise;
- 2) The microenterprise had to have been in operation for more than six months; and

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<sup>22</sup> This registration method was preferred to the "random walk" approach of including the first (second, third, etc.) eligible microentrepreneur encountered by the enumerator, because it did not leave the selection of the non-client sample in the hands of the individual enumerators. A separate group of individuals conducted the registration, thus constructing the non-client sample frame in advance. The non-client sample was then randomly selected from the registration list. Incidentally, the registration method provided information on the coverage (outreach) of formal and program microenterprise credit in the area.



- 3) The microentrepreneur could not have previously received microenterprise credit from the government, formal sector, or NGOs.

Table 3.2. Number of Non-Client Microentrepreneurs Registered in Pre-Survey, by Sector and Credit Agency

Credit Agency	Total for All Sectors	Sector		
		Commercial	Service	Industrial
San Juan de Miraflores	1,290	960	200	130
Comas	1,490	1,200	190	100
Los Olivos	1,220	950	180	90
TOTAL	4,000	3,110	570	320

From the registration list of 4,000 eligible non-clients, a total of 301 were randomly selected into the non-client sample. Due to the registration procedure that was followed, the non-client sample has the same location and sector characteristics as the client sample and has been screened to meet the ACP requirement that the microenterprise be at least six months old. In addition, the non-client sample had received no previous microenterprise credit from the government, NGOs (i.e. ACP, CARE, IDESI, CREDIMPET, Alternativa, Manuela Ramos, etc.), or banks (i.e. Banco de Trabajo, Solventa, Banco Sudamericano). Although eligible non-clients were not specifically matched to clients by gender, the resulting client and non-client samples had the same gender composition, with approximately 61 percent female respondents in both groups.

### **D.3. Classification of Enterprises: Primary and Non-Primary**

Each of the households in the final sample had one or more enterprises. Because enterprise-level impacts could be measured only if enterprises were tracked from one survey round to the next, it was necessary to identify enterprises within households. This identification was accomplished by designating each enterprise in the household as “primary” or “non-primary.”

The primary enterprise is a key unit of analysis at the enterprise level. For client households, an enterprise was classified as “primary” if it was the microenterprise for which the ACP/Mibanco credit was approved in 1997. For non-clients, the primary microenterprise is the one that was registered during the construction of the non-client sample frame. Therefore, the primary enterprises for non-clients have the same sector and location characteristics as the primary enterprises for clients.

Under this classification approach, there was no requirement that the primary enterprise be the largest generator of household income or the largest microenterprise within the household. In fact, the classification of enterprises was unaffected by whether or not the household had other, non-enterprise, sources of income. Instead, the classification as a primary microenterprise was used either to designate the microenterprise for which (ostensibly) the ACP/Mibanco credit was used (for client households) or to designate the non-client microenterprise that was registered as

being in the same location and sector as the client's primary microenterprise. This classification approach allowed primary enterprises to be tracked and compared across the two rounds of the survey.

Non-primary enterprises are any other microenterprises that generated income for the household in the previous year. A separate enterprise-level questionnaire, covering the full range of enterprise data, was administered for the primary enterprise and up to two additional microenterprises associated with the household. These two additional microenterprises were classified as either "secondary" or "tertiary" enterprises. A secondary enterprise was the microenterprise that, not counting the primary microenterprise, earned the largest net income for the household in the previous year.<sup>23</sup> If the household had one or more additional microenterprises after the primary and secondary enterprises had been designated, then the microenterprise that earned the largest net income in the previous year (i.e. not counting the primary or secondary microenterprises) was designated as the "tertiary" enterprise.

Enumerators were instructed to complete separate enterprise questionnaires for up to three enterprises associated with the household. However, enterprise questionnaires were only completed for those enterprises that had revenue in the previous month, since this provided a relevant context for many of the questions in the enterprise questionnaire. If an enterprise had not operated within the month immediately preceding each survey round, an enterprise questionnaire was not completed.<sup>24</sup>

#### ***D.4. Data Collection***

The first round of the survey was administered between August 11 and 20, 1997. There were seven field teams, with five enumerators and a field supervisor on each team. The second round of the survey was administered between August 19 and September 20, 1999. There were four field teams for the second round. Two of the teams were composed of one supervisor and four enumerators each while the other two were composed of two supervisors and seven enumerators. For both rounds, the field supervisor was responsible for checking the questionnaires completed by the enumerators each day.

On average, each enumerator completed questionnaires at the rate of two households per day. In addition to the enumerator teams, there was an overall survey supervisor, a logistics specialist, and three pre-survey registrars (for constructing the non-client sample frame). All the survey personnel were employees of the Cuanto Institute. Enumerators and field supervisors attended a four- to five-day training course in the week prior to the survey.

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<sup>23</sup> Theoretically, the secondary enterprise could be larger and have higher revenues than the primary enterprise. However, the primary enterprises in the sample were, on average, the largest and most productive enterprises in the sample households.

<sup>24</sup> There are several possible reasons for a primary enterprise not reporting revenue in the previous month, including that the enterprise was seasonal; the entrepreneur was ill, traveling, or attending other concerns; or the household economic portfolio was in transition. However, even if an enterprise had not generated revenue in the 30 days prior to the survey, if it had been in operation during the 12 months prior to the survey, data on annual net revenue from the enterprise and aggregate enterprise fixed assets were captured in the household questionnaire.

The questionnaires were formatted and pre-coded by the Cuanto Institute to closely resemble their LSMS survey instruments. Most of the supervisors, and many of the enumerators, had participated in prior LSMS surveys, and thus were very familiar with the format of the questionnaires. In general, income and expenditure data in the questionnaire were collected in terms of time periods that corresponded to the usual frequency of occurrence in each category. The questionnaires were coded and the data were entered at the Cuanto Institute, where both manual and automated consistency checks were conducted on the data.

#### ***D.5. Data Problems***

Once the data were received, additional integrity checks were conducted. The major problems found at this stage could be attributed to

- entry error,
- coding as “other” a response that matched a predetermined category;
- including data for enterprises that had not operated in the previous thirty days;
- excluding enterprise data due to a misinterpretation of the exclusion rules;
- missing values;
- weak measurement approaches; and
- changes in enterprises or respondents between the two survey rounds.

Many of the data problems were corrected by referring back to the completed questionnaires. Some entry errors were found in the unique identifying numbers used to match data files. These were corrected. Other entry errors were identified during the exploratory stages of the statistical analysis, through examination of descriptive statistics and outlier analysis. “Other” values, which were selected by enumerators if a given response did not seem to match a predetermined response category, were in most cases moved into a predetermined category based on the enumerators’ notes on the questionnaires. Enterprises that had been closed for more than thirty days prior to the survey were identified and the data for them removed from the data set. Data for enterprises that had been mistakenly excluded were entered.

Other types of data problems could not be corrected. Fortunately, the questionnaires tended to be complete, resulting in very few missing values in the data. On the other hand, problems due to weak measurement approaches were more common. In particular, the responses on several of the individual-level impact variables exhibited little variation, indicating that the measurement approach may not have been sensitive to detecting differences between respondents. These problems are discussed in greater detail in the section describing the results for the individual-level impact hypotheses.

Other data problems resulted from changes in the household economy or the identity of the respondent between the two rounds of the survey. Between 1997 and 1999, some enterprises had closed, reducing the size of the enterprise sample. In other cases, the person responding to the questionnaires (both household and enterprise) in 1999 was not the same respondent as in 1997. This lack of continuity invalidated comparisons on individual-level changes such as self-esteem

and control over decisions related to household resources. This resulted in a reduction in the sample size for testing these individual impact variables.

#### ***D.6. Panel Attrition***

For the first round of the survey, the greatest difficulty in the field was in locating some of the respondents. Once located, there was a very high acceptance rate, with 95 percent of located respondents agreeing to participate in the survey. The second round proved more challenging. As in the first round, it was difficult to locate some respondents. In addition, many of those who had willingly participated in the baseline survey refused to do so in 1999. In total, 171 individuals from the original sample of 701 did not participate in the second round, either because they could not be located or because they refused to be interviewed in the second round.

*Reasons for panel attrition.* The pre-survey registrars, who were charged with locating the sample, found that many respondents had moved their home or business location, had traveled to other parts of the country or world, or had simply closed their businesses. As a result, these respondents were difficult or impossible to locate. Though in some cases the registrars were able to find respondents using information from neighbors or other sources, a total of 94 respondents, or 13 percent of the original 701 respondents could not be located. This reduced the available sample to 607 households.

There were also many respondents from the first round who were unwilling to participate in the second round of the survey. A total of 67 persons, or almost ten percent of the original sample, refused to be re-interviewed. The principal reason for refusal was mistrust; respondents related that they feared that shared information would somehow be used against them. Specifically, respondents cited fear of robbery or of kidnapping, stating that if they were to share information about their wealth, they would render themselves more vulnerable to such crimes. Apart from fear, the length of the survey and the time involved influenced many individuals to decline to participate. Fear of reprisals from ACP/Mibanco was also cited; respondents were afraid that if ACP/Mibanco were to find out that their businesses were struggling, their loans would be discontinued or interest rates increased. Finally, fear of the national tax authority kept several respondents from participating.

Ten households initially agreed to participate, but changed their minds during the interviews, refusing to answer further questions. These cases were dropped from the sample because their questionnaires were incomplete. Finally, for one observation, a comparison of the first and second round surveys clearly showed that the households interviewed in 1997 and 1999 were not the same, and the observation was dropped. Overall, panel leavers numbered 172, or 24 percent of the original sample. This attrition left a sample of 529 households comprised of 316 client households and 213 non-client households.

*Analysis of Differences Between Original and Final Samples.* As the original sample was randomly selected, it was representative of the Mibanco client households and their neighboring non-client households. The final sample turned out to be very similar to the original sample, with some small differences. This section analyzes how panel attrition affected the composition of the final sample relative to the original sample. Table 3.3 presents the results of two types of

analysis: 1) a comparison of the characteristics of the original and final samples and 2) a probit analysis of the factors associated with panel attrition.

Table 3.3. Results of Panel Attrition Analysis

	Sample Characteristics		Probit Analysis of Panel Attrition	
	Original Sample (n=701)	Final Sample (n=530)	Full Panel (n=675)	Client Panel (n=372)
Gender of Entrepreneur				
Female	61.2	60.8	-.085	-.013
Male	38.8	39.2		
Age of Entrepreneur	41.6	41.7	.003	.020 <sup>1</sup>
Poverty Level of Household				
Non-Poor	66.4	66.9	.130	.044
Poor	33.6	33.1		
Marital Status of Entrepreneur				
Married	78.0	80.2	.270 <sup>1</sup>	.244
Unmarried	22.0	19.8		
Zone, Primary Enterprise				
Modern	22.1	18.3		
Popular	59.4	62.1	.311 <sup>1</sup>	.584 <sup>1</sup>
Marginal	18.4	19.6	.317 <sup>1</sup>	.702 <sup>1</sup>
Sector, Primary Enterprise				
Industrial	7.4	7.3		
Commercial	78.1	78.3	.098	.094
Service	14.5	14.4	.143	.269
Age of Primary Enterprise	6.6	6.6	.005	-.021
Type of Premise, Primary Enterprise				
Home-Based	48.5	52.3		
Formal	31.5	26.3	-.183	-.342
Informal	20.0	21.3	.278 <sup>2</sup>	.277
Premise Ownership, Primary Enterprise				
Own premise	53.7	56.5	.243 <sup>1</sup>	.084
Do not own premise	46.3	43.5		
Municipal License				
Have License	58.7	58.5	-.026	.210
Do Not Have License	41.3	41.5		
Tax Registration				
Registered	55.5	55.8	.195 <sup>2</sup>	.041
Not Registered	44.5	44.2		
Program Status (clients only)	(n=399)	(n=316)		
Program Stayer	41.6	46.5	---	.748 <sup>1</sup>
Program Leaver	58.4	53.5		

<sup>1</sup> p<.01    <sup>2</sup> p<.10

The original and final samples were the same or very similar in terms of gender and age of the entrepreneur, poverty level of the household, sector and age of the primary enterprise, and licensing and tax registration (table 3.3). The final sample differed slightly from the original sample in terms of zone, type of premise, and premise ownership for the primary enterprise; marital status of the entrepreneur; and, for clients, whether they had remained in or exited from the ACP/Mibanco lending program.

One of the most noticeable differences between the two samples is a reduction in the percentage of primary enterprises operating in the modern zones of Lima. As a result, the final sample is less heavily weighted toward primary enterprises in modern zones than was the original sample (table 3.3). A possible explanation for this shift is a general exodus of microenterprises from the modern zone during the study period. It may have been more difficult to find respondents who had relocated, thus leading to higher levels of panel attrition. Even among the enterprises remaining in the panel, there was evidence of enterprise relocation away from the modern zone ( $p < .01$ ). This general shift of microenterprises out of the modern zones may have been due to increasingly unfavorable treatment by the municipal authorities and a general “sweeping out” of microenterprise activity from the modern zones.

A second noticeable difference between the original and final samples is a reduction in the percentage of primary enterprises located in formal premises. A “formal” premise is a formally established commercial or industrial location such as a formal market, commercial storefront, or industrial site. Associated with the drop in the percentage of enterprises in formal premises was an increase in the percentage of home-based premises.<sup>25</sup> “Home-based” businesses are those that are located within the entrepreneur’s home.

A third difference between the samples was that those entrepreneurs who did not own their enterprise premises left the panel in higher proportions than those who did own their premises. There is a correlation between type of business premise (i.e. formal, home-based) and ownership of the premise that helps to explain the observed differences in these variables. Entrepreneurs of home-based enterprises commonly own their business premises (86 percent) while entrepreneurs with formal premises are less likely to own their business premises (34 percent). While most home-based enterprises would be in the same location in both 1997 and 1999, enterprises in formal premises would be more likely to move due to a change in their rental agreements. Thus, it was more difficult to locate these enterprises for re-interview in 1999.

The only other noticeable difference between the original and final samples was in the marital status of the entrepreneur. Panel stayers and panel leavers differed significantly on marital status, with 80 percent of panel stayers reporting that they were either married or living with a partner compared to only 71 percent of panel leavers ( $p < .05$ ). This resulted in a final sample with a slightly higher percentage of married respondents than the 78 percent in the original sample.

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<sup>25</sup> There was also a small increase in the “informal” premise category, which encompasses such unlicensed or otherwise unauthorized locations as street corners, informal roadside markets, or mobile locations.

Finally, a separate analysis, which included only the clients of ACP/Mibanco, revealed that program status was an important factor in determining whether or not respondents remained in the sample. In fact, only 11 percent of clients who continued to borrow from ACP/Mibanco at the time of the 1999 survey left the sample, compared to a 28 percent panel attrition rate for those clients who were no longer borrowing ( $p < .01$ ). Analysis by delinquency rate provided similar results; clients who missed or had been late on a loan payment were significantly more likely to leave the sample than clients who were not delinquent ( $p < .05$ ).

*Implications of Panel Attrition for the Impact Assessment.* The results of the analysis of panel attrition point to some changes in the composition of the sample. A constellation of three changes related to the primary enterprise—zone, type of premise, and premise ownership—appear to be somewhat related. The uneven rates of panel attrition on these three variables (as well as on marital status) could all be at least partially explained by the increased difficulty in locating these types of respondents. The resulting numeric differences between the baseline and final samples are relatively small and probably do not bias the impact findings either way. On the other hand, these variables are included as alternative explanatory (moderating) variables in the impact analysis. This allows any relationships between the outcome variable and the moderating variables to be estimated independently of the relationships between the outcome variable and microcredit.

The fact that program leavers were also more likely to be panel leavers implies that the results of the impact study are more representative of those who chose to continue to borrow from ACP/Mibanco than they are of program leavers. It is reasonable to assume that those who chose to stay in the program were also those who were receiving the greatest benefits. Therefore, the impact results probably overstate the positive impacts (and understate the negative impacts). A formal analysis relating program attrition to the characteristics of the sampled households and enterprises is provided in section four.

## **E. Analysis of the Survey Data**

This section describes the approach and the techniques used to analyze the survey data. There are three main subsections. First, some basic issues in the design of an impact assessment are reviewed and the research design for this survey is described. Next, the participation categories, or comparison groups, are defined. The impact assessment is based on a comparison of these three groups in terms of changes in the outcome variables. The third subsection describes the main statistical methods used in the analysis of the survey data.

### **E.1. Research Design and Issues in Impact Analysis**

#### ***E.1.a. The impact problem***

The basic problem in impact analysis is to determine the effect of an intervention, or treatment, on an outcome variable. In the case of this study, the intervention is the microenterprise credit (i.e. microcredit) and the outcome variables are the variables in the impact hypotheses listed at the beginning of this section, such as household income, enterprise revenue, and so on. Moffitt provides this description of the impact problem:

Suppose that we wish to evaluate the effect of a particular intervention (i.e., a treatment) on individual levels of some outcome variable. Let  $Y$  be the outcome variable and make the following definitions:

$Y^*_{it}$  = level of outcome variable for individual  $i$  at time  $t$  if he or she has not received the treatment

$Y^{**}_{it}$  = level of outcome variable for same individual  $i$  at same time  $t$  if he or she has received the treatment at some prior date.

The difference between these two quantities is the effect of the treatment, denoted  $\tau$  :

$$Y^{**}_{it} = Y^*_{it} + \tau$$

or

$$\tau = Y^{**}_{it} - Y^*_{it}$$

The aim of the evaluation is to obtain an estimate of the value of  $\tau$  , the treatment effect. (Moffitt 1991, 292-293)

In other words, impact evaluation seeks to measure the difference in outcome between an individual who received the treatment and what the outcome *would have been* for the same individual, if he or she *had not received* the treatment. Obviously, the latter is an unobservable event. The only practical alternative is to compare the outcome for individuals who receive treatment with the outcome for individuals who do not receive treatment. This is one of the fundamental problems in impact evaluation and the source of the associated self-selection problem.

### ***E.1.b. The self-selection problem***

The self-selection problem is related to the possibility that there are pre-existing differences between those individuals who receive treatment and those who do not, and that these differences may lead to incorrect measurement of the treatment effect. The self-selection problem arises under situations in which an individual is free to choose (or elect) to receive treatment. In the case of this study, the program participants all elected to receive the “treatment” by voluntarily becoming clients of the ACP/Mibanco microcredit program.

Similarly, a selection problem can arise when program administrators choose who will be able to participate and who will not. In selecting participants, administrators may select only those applicants with specific characteristics. A skilled credit agent, for example, will only give loans to those who are reasonably likely to repay. Just as with voluntary self-selection, those who eventually become clients will be the ones with the best prospects for repaying the loans. Consequently, they will also be the ones most likely to derive positive benefits from the loans.



In this way, the self-selection problem can bias the results of an impact analysis to overstate the positive impacts of the treatment.

Moffitt (1991) describes three general approaches to addressing the self-selection problem inherent in program evaluation with non-experimental data. He indicates that one of these approaches, the use of longitudinal data, has important advantages: “the availability of longitudinal data can eliminate the selectivity bias that would be present in only a single cross section of data” (Moffitt 1991, 298). By providing measures of the outcome variable at more than one point in time, longitudinal data help to eliminate the bias of comparing individuals with different starting points.<sup>26</sup> In the absence of longitudinal data, the self-selection problem is usually addressed through the use of econometric models utilizing identifying variables to model fixed effects.<sup>27</sup>

Panel data, a specific type of longitudinal data, result from interviewing the same respondents on the same variables, measured at more than one point in time. This is in contrast to cross-sectional data, in which respondents are interviewed at only one point in time. There are two types of panel data that are important in impact assessment: 1) prospective panel data, drawn from multiple surveys that occur at more than one point in time, using the same respondents and measuring the same outcome variables each time and 2) retrospective panel data, drawn from a survey that occurs only once, with respondents asked about outcome variables in two or more time periods (Menard 1991, 4-5).<sup>28</sup>

### *E.1.c. The research design*

The collection of the survey data for this study was based on a non-experimental research design utilizing prospective panel data. The use of panel data is an important strength of the study, allowing greater simplicity and transparency in the choice of analytical methods. More specifically, the survey data used in this study correspond to a prospective panel design in which the survey occurs at two points in time. The same respondents were interviewed both times, and the same operational variables were measured each time. Another name for this research design is a *nonequivalent group design* (Cook and Campbell 1979); the groups are nonequivalent in the sense that one group self-selected into the program and the other did not.

Following the conventional notation, the panel data for this study can be represented as follows:

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<sup>26</sup> An assumption underlying the use of panel data to eliminate self-selection bias is that, while the starting points of the treatment and control groups do not have to be the same, the growth rate in the outcome variable is assumed to be the same in the absence of the treatment (see Moffitt 1991, 299 and figure 1).

<sup>27</sup> Many of the more recent impact assessments of microenterprise programs have been based on cross-sectional data sets. For example, the impact assessments described in Pitt and Khandker (1996), Khandker (1998), Lapar et al. (1995), and Zeller et al. (1996) rely only on cross-sectional data. The impact assessments reported in Hulme and Mosley (1996) rely on either cross-sectional data or, in some cases, retrospective panel designs.

<sup>28</sup> A third possible type of panel design is a repeated cross-sectional design, in which the survey is repeated two or more times, but with different respondents each time. This is less useful for impact evaluation because it can not be used to establish causal order (Menard 1991, 27).

$$\begin{array}{ccc} X & O & O \\ \hline & O & O \end{array}$$

where X represents initial receipt of microenterprise services, O represents the collection of data, and the dashed line is used to indicate that the treatment and control groups are nonequivalent. It is important to note that the clients of ACP/Mibanco had already received one or more microenterprise loans at the time the baseline data were collected. Because of this, the baseline data do not represent a true pre-treatment measurement. In other words, some of the positive (or negative) impacts of microcredit may already be reflected in existing baseline differences between the treatment and control groups. Because of this, the impact results may underestimate the actual treatment effect.

#### ***E.1.d. Summary***

In planning the research design for the survey, considerable attention was placed on addressing the problem of self-selection, since this presented a key threat to the internal validity of the impact assessment results. Because those individuals most likely to experience positive impacts are also the most likely to apply for and receive loans, the results are likely to overestimate the size of the positive impacts. While selection bias is not fully eliminated in this study, it is reduced through the use of panel data and an analytical approach that compares outcomes for members of the treatment and control groups who start with similar observed characteristics in the baseline period.

The fact that the treatment group may have already experienced some positive impacts prior to the collection of the baseline data creates a possible bias working in the opposite direction of the selection bias. The lack of a true pre-treatment baseline may lead to results that underestimate impacts. As described in the next section, the analysis of data on new entrants to the ACP/Mibanco program helps to bridge some of the uncertainties arising from the research design. Because many of the uncertainties remain, however, the impact results presented in this report should be interpreted with caution (see section E.3.e below).

#### ***E.2. Participation Categories***

The research was designed to collect data on two participation categories: 1) the treatment group, consisting of clients of the microcredit program and 2) the control group, consisting of non-clients who had been selected to resemble the clients in several ways. However, some of those respondents who had been in the control group during the first round of the survey became new clients of ACP/Mibanco in the period between the first and second rounds of the survey. Specifically, of the 213 respondents in the original control group who were re-interviewed in the second round of the survey, some 16 percent, or 38 respondents, had become new clients of ACP/Mibanco in the two years between the survey rounds.

Because it was plausible that these new clients could experience treatment effects from receipt of the microcredit, they were removed from the control group prior to the statistical analysis of

impacts. These new entrants to the ACP/Mibanco program were treated as a separate participation category. For the statistical analysis of impacts, a total of three participation categories were used:

- The *treatment group*. Entrepreneurs who were clients of ACP at the time of the first round of the survey, plus their households, and the enterprises owned by members of their households. The eleven case study households were removed from the treatment group data prior to the statistical analysis of impacts.
- The *control group*. Entrepreneurs who met the basic requirements for ACP credit but who had never received microenterprise credit from ACP, a bank, or other microcredit program at the time of the first round of the survey, plus their households, and the enterprises owned by members of their households. Entrepreneurs who subsequently received microcredit from ACP/Mibanco were removed from this group and placed in the new entrant group prior to the statistical analysis of impacts.
- The *new entrant group*. Entrepreneurs who became clients of ACP/Mibanco for the first time between the two rounds of the survey, plus their households, and the enterprises owned by members of their households.

The central comparison for the impact study is between the treatment and the control groups. The results of this comparison indicate the treatment effects that can be expected to exist two or more years after first receiving microcredit. Specifically, the treatment (or “dosage”) is defined in this study as having received one or more ACP/Mibanco loans at least two years before the 1999 survey. The impacts that are identified in this comparison of the treatment and control groups can be considered the more durable impacts of microcredit.

In addition, the study compares the new entrant group, representing the new clients of ACP/Mibanco, to the control group. In this comparison, the treatment is defined as having received a first ACP/Mibanco loan less than two years before the 1999 survey. The results of this comparison are interpreted to reflect the short-term, or immediate, impacts of microcredit. Since the new entrants are a relatively small group, we can expect fewer statistically significant results for this comparison. However, the comparison of the new entrant and control groups does provide interesting insights into how program impacts might occur over time.

### **E.3. Statistical Methods**

The survey data were analyzed using several complementary approaches. In order to provide information on the relative changes in the outcome variables between the two rounds of the survey, paired t-tests and gain score analysis were used. The results of the paired t-tests and gain score analysis are treated as part of the descriptive analysis, rather than as part of the impact analysis *per se*. In other words, these results provide important information about the size and direction of changes in the outcome variables for all of the comparison groups. This is important background information for interpreting the impact results.

The impact analysis relies primarily on the ANCOVA approach, which estimates both the impact of the treatment on the outcome as well as the influence of other explanatory, or moderating, variables on the outcome. The ANCOVA approach and the moderating variables are discussed in this section, along with a description of a separate analysis relating the amount of time in the ACP/Mibanco program to the levels of impacts. Since statistical significance plays an important role in interpreting the study results, this section also contains a philosophical note on the meaning of “significance.” Finally, the methods for detecting and handling sample outliers in the study are described.

### *E.3.a. Paired t-tests*

Paired t-tests were used to determine whether any of the participation groups experienced significant changes in the levels of the outcome variables between 1997 and 1999. For example, in order to determine whether the level of food expenditures had changed significantly for the treatment group between 1997 and 1999, a paired t-test was performed in which the levels of food expenditures for households in the treatment group in 1997 were compared to the levels of food expenditures for the same households in 1999.

The results of the paired t-tests and the mean values in each year are reported in the discussion of the results for each of the outcome variables. A set of four paired t-tests were conducted for each of the outcome variables: 1) for the total sample; 2) for the treatment group; 3) for the control group; and 4) for the new entrant group. When the results of a paired t-test are significant, that indicates that there was a statistically significant change in the mean value of the outcome variable between 1997 and 1999. It does not indicate whether the change in the outcome variable was due to microcredit or to some other moderating variable(s).

### *E.3.b. Gain score analysis*

Gain score analysis was used to compare the relative magnitude of changes in outcome variables between 1997 and 1999 for two different comparison groups. The basic idea in gain score analysis is to compare two groups in terms of the average change in the outcome variable experienced between the first and second rounds of the survey. By taking account of the fact that each group may have a different starting point in the first-round survey, gain score analysis partially addresses the effects of initial selection differences (Reichardt and Mark 1998, 216).

Gain score analysis is based on comparing the average change in the impact variables for two different groups, for example, between the treatment group and the control group. This corresponds to the calculation of the treatment effect (") as the difference between the gain score for the treatment group (the 1999 result less the 1997 measurement for a given outcome variable) and that for the control group. If the mean value of the change experienced by the treatment group is greater than the mean value of the change experienced by the control group, and the difference between the means is statistically significant, then that provides empirical evidence that the changes in the outcome variable experienced by the two groups were not equal.

For each outcome variable, two sets of comparisons were made using gain score analysis: 1) a comparison of the treatment group to the control group and 2) a comparison of the new entrant

group to the control group. Gain score analysis is an intuitively straightforward data analysis approach; it indicates whether the average change in the outcome variable for one group differs significantly from the average change for another group. However, the gain score approach implemented here does not take into account the influences of the moderating variables and does not attempt to account for differences between the two groups in levels of the moderating variables and the level of the outcome variable in 1997.<sup>29</sup> For these reasons, the gain score results are treated as descriptive of the relative differences in the outcome variables over time, while the ANCOVA results (described below) are interpreted as the most credible impact information.

### *E.3.c. Analysis of covariance (ANCOVA)*

Analysis of covariance (ANCOVA) was used to analyze the impacts of microcredit. The ANCOVA procedure has the advantage of statistically controlling for multiple differences between the treatment and control groups, differences that may have a moderating effect on the relationship between program participation and changes in the outcome variables. In effect, the ANCOVA procedure provides a statistical “matching” of individuals in the treatment and control groups.

The ANCOVA procedure operates to statistically “match” observations in the treatment and control groups that have the same baseline measures on the outcome variable and on the moderating variables.<sup>30</sup> It then compares these matched observations to determine whether there are any consistent differences between the treatment and control groups in terms of second-round outcome values. In other words, given similar measures on the impact variable and the moderating variables in the baseline, the ANCOVA procedure looks for systematic differences in second-round outcomes. It “statistically matches individuals in the two treatment groups on their pretest scores, and uses the average difference between the matched groups on posttest to estimate the treatment effect” (Reichardt and Mark 1998, 217-218).<sup>31</sup>

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<sup>29</sup> Gain score analysis can also be implemented with moderating variables.

<sup>30</sup> In the language of ANCOVA, the baseline measures of the impact variable and the moderating variables are the “covariates.”

<sup>31</sup> The ANCOVA model can be represented algebraically as follows (Reichardt 1979, 153):

$$Y_{ij} = \mu + \alpha_i + \beta(X_{ij} - \bar{X}) + \epsilon_{ij}$$

$$\epsilon_{ij} \sim \text{NID}(0, \sigma^2)$$

X is fixed (if random, then X is independent of  $\epsilon_{ij}$ )

The notation is used differently here than in the rest of this document. Here,  $i$  indexes the group (treatment, control, or new entrant), and  $j$  indexes the individual observation (e.g. household). The variable  $Y$  is the second-round measure,  $\mu$  is the mean value of all the second-round observations,  $X$  is the baseline measure, and  $\bar{X}$  is the mean of the baseline measures. The estimate of the treatment effect is the difference between the estimate of  $\alpha$  for the treatment group and the estimate of  $\alpha$  for the control group.

Essentially what ANCOVA does is to allow separate, parallel regression lines to be fitted through the data for the treatment group and the data for the control group. The regression lines estimate the measure of the outcome variable in 1999, given the measure of the outcome variable in 1997. To the extent that participants have systematically higher second-round measures for a given first-round measure, then the regression line for the treatment group will have a higher intercept than the regression line for the control group. In ANCOVA, the distance between the two regression lines is the estimate of the treatment effect. When the distance between the two regression lines is statistically significant, that provides empirical evidence for rejecting the null hypothesis of no treatment effect.

The ANCOVA approach can be used to control for a variety of baseline differences between the treatment and control groups in addition to differences in the outcome variable. In other words, specific moderating variables, such as gender of the entrepreneur and sector of the enterprise, can be brought into the ANCOVA model as additional “covariates.” As with the baseline measures on the outcome variable, ANCOVA statistically controls for differences in moderating variables by matching observations with the same or similar levels, helping to uncover statistically significant impacts, even when the treatment effect is small relative to the variability associated with differences in the moderating variables.

#### *E.3.d. Moderating variables*

For each of the outcome variables, key moderating variables were selected that were believed to be related to the outcome variable. That is, the size of the outcome variable was expected to be different for different levels of the moderating variables. The 1997 values of these selected moderating variables were included in the estimations of the ANCOVA models. The statistical tables in appendix 4 list the moderating variables included in each hypothesis test.

There are at least three reasons for including moderating variables in the analysis. First, if the participant and control groups differ significantly in the distribution of these moderating variables, then at least some of the measured differences in the outcome variables may be due to differences in the moderating variables rather than to program participation. In this case, it is necessary to make statistical adjustments in order to control for differences between the participant and control groups in the moderating variables. In this way, including the moderating variables in the impact analysis helps to control for initial selection differences. Second, by including the moderating variables, it may be possible to determine how the levels of outcomes on the impact variables can be expected to vary according to the level of the moderating variables. This provides information about differences in the sizes of outcomes that might be experienced by different types of participants (e.g. men and women), regardless of the treatment effect. Third, the moderating variables may help to statistically explain the variation in impacts, thus providing a more powerful analysis of impact.

*Enterprise-level moderating variables.* The number and type of moderating variables selected for inclusion in the analysis of enterprise-level impact variables differed with the unit of analysis. For individual enterprises, the survey captured data on an array of variables which could be considered moderating variables. Thus, when the primary enterprise was the unit of analysis, it

was possible to include a range of variables such as enterprise sector and gender of the entrepreneur.

At the primary enterprise level, it was hypothesized that the following variables might be related to the levels of the outcome variables:

- enterprise sector --commercial; service; industrial
- gender of entrepreneur --male; female
- proximity to paved road --next to a paved road; not next to a paved road
- type of business premise --home-based; formal location; informal location
- enterprise location (zone) --modern; popular; marginal
- premise ownership --owned; not owned

For variables containing aggregate data for multiple enterprises (such as enterprise revenue for up to three enterprises), fewer moderating variables are available because variables such as gender and sector cannot be aggregated (i.e. multiple enterprises within a given household may be in different sectors and have managers of different genders). Seven of the nineteen impact variables included in the enterprise-level analysis are aggregate measures. For each of these, number of microenterprises was included as a moderating variable.

*Household-level moderating variables.* At the household level, the following variables were expected to be related to the outcome variables:

- number of economically active household members,
- number of income sources,
- annual household income,
- age of head of household,
- housing tenure,
- number of students in household, and
- number of dependents in household.

Each of these moderating variables were included in the statistical analysis of the impact variables where relevant. Housing tenure, for example, was used only in the analysis of expenditures on housing improvements, and number of students in the household was used only for the analysis of education expenditures, because these moderating variables were relevant only for the analysis of those impact variables. Household income, on the other hand, could be expected to influence all household impact variables and was therefore included in almost all of the analyses.

*Individual-level moderating variables.* Moderating variables selected for use in the analysis of individual-level impact variables were the following:

- gender,
- marital status,
- presence of additional income earners in the household, and
- annual household income.



Again, these variables were included in the statistical analysis only where relevant. An alternative approach would be to include all possible moderating variables in all estimations. However, this study follows the more conservative approach of including only those moderating variables that can be plausibly linked to changes in the outcome variable. In this way, the interpretation of the results are more straightforward: a statistically significant coefficient on the moderating variable provides an estimate of the size and direction (positive or negative) of the relationship between the moderating variable and the outcome variable.

### *E.3.e. Limitations of the statistical approach*

It is important to note that the statistical approach used to analyze impact in this study has several limitations. The most important of these limitations is that it does not eliminate all possible self-selection bias that may arise from the non-experimental research design. More specifically, the ANCOVA approach implemented here does not control for differences between the comparison groups on possible unobserved moderating variables, such as entrepreneurial talent, which may affect outcomes.<sup>32</sup> These unobserved variables are not included in the analysis, except indirectly to the extent that they influence the baseline levels of the outcome variables. As a result of this limitation, the ANCOVA estimates of the treatment effect may overstate the positive impacts of microcredit and understate the negative impacts.

On the other hand, a second limitation of the analysis is that the baseline data do not represent true pre-treatment measures of the outcome variables. For example, the 1997 measures of enterprise revenue for the treatment group were taken after members of the treatment group had already received one or more initial loans. Therefore, the impact results may underestimate the size of the increase (or decrease) in revenues, because some of the impacts may already be reflected in the baseline measures of revenue.

In addition to simply acknowledging that these two potentially opposite biases may be present in the impact results, we also should consider the evidence provided by analysis of the new entrants. For the new entrant group, the dosage is defined as having received ACP/Mibanco credit for the first time between the baseline and second round of the survey. There are several advantages to comparing the new entrants to the control group. First, we can compare their baseline measures on the outcome variables, when both groups had never received ACP/Mibanco credit. If their baseline measures are similar, then that is evidence against the presence of substantial self-selection bias. Second, the baseline measure for the new entrant group is a true pre-treatment measure. Unfortunately, the sample size for the new entrant group

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<sup>32</sup> An alternative is to use a fixed-effects approach, either in conjunction with ANCOVA or as a simple fixed-effects model. This approach can be used to “sweep out” both observed and unobserved time-invariant variables, but it does not control for unobserved, time-variant variables (note that this could be partially addressed with additional assumptions and a two-step estimation procedure). Because the fixed effects model is based solely on differences (changes) between 1997 and 1999, it does not make use of information on different starting levels for the outcome variables or different levels of participation in the ACP/Mibanco credit program prior to 1997. The observed time-invariant variables are differenced out in the fixed effects approach, which leads to results that do not provide empirical information on the relationships between these observed time-invariant variables—such as gender and enterprise sector—and the outcome variables.



is quite small (n=38), leading to some constraints related to degrees of freedom in the statistical analysis.

Finally, a third important limitation of the statistical approach to the impact analysis is that it is based on a relatively weak definition of the treatment dosage. For the treatment group, the dosage is defined as having received ACP/Mibanco credit prior to the baseline (1997) survey. The result of this limitation is that the length and depth of prior participation could vary dramatically across members of the treatment group, even though they all received a first credit at least two years before the 1999 survey. This particular treatment dosage was selected because the length of time (over two years) was considered sufficient for many impacts to become measurable and because the program participation data were known to be reliable. Unfortunately, it was difficult to obtain complete and consistent data on other, more detailed measures of program participation.

In order to partially compensate for the weakness in the definition of the treatment dosage, an alternative analysis was conducted using length of time in the ACP/Mibanco program as the dosage variable. For this analysis, the 1999 value of the outcome variable was regressed on 1) a measure of the total time as a client,<sup>33</sup> 2) the 1997 value of the outcome variable; 3) the same moderating variables included in the ANCOVA models, and 4) a variable reflecting whether or not the household had received microenterprise credit from a source other than ACP/Mibanco between 1997 and 1999.<sup>34</sup> The results of the time in program analysis provide some indication of the size of the relationship between changes in the outcome variable and the length of time since the first credit.

### *E.3.f. A note on “significance”*

Throughout the reporting of the results, the term “significant” is used in the sense of “statistically significant”, meaning that the difference between means or the parameter estimate being reported statistically differs from zero. The level of significance used is reported in the text as  $p < .01$ ,  $p < .05$ , or  $p < .10$ , indicating a 99, 95, or 90 percent confidence level, respectively. These three levels of significance were selected in accordance with standard practice in policy analysis. On a few occasions, a difference is reported to be “marginally significant” if there is a preponderance of evidence that some type of relationship exists, but the statistical evidence does not meet the (somewhat arbitrary) criterion of  $p < .10$ . Generally, results reported as marginally significant range between  $p = .10$  and  $p = .15$ , and the exact level of significance is always reported in the text.

There are several reasons why a result will not be statistically significant, and all of these reasons should be considered in interpreting the results:

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<sup>33</sup> Time as a client is measured as the total time elapsed between receipt of the first loan until the end of the last loan the client received, or the date of the 1999 survey, whichever came first.

<sup>34</sup> A linear regression model was estimated for continuous outcome variables, and a logistic regression model was estimated for dichotomous outcome variables.

- The hypothesis being tested may not be true. In other words, the anticipated impact just may not be taking place.
- The measurement approach used to collect data on the impact variable may not be very good. It may be biased, ambiguous, or lack the ability to separate out different types of responses.
- There may be too few observations in the sample relative to the size of the variation in the responses, resulting in a wide confidence interval that wraps across zero.
- The model being estimated may be misspecified.
- A selection or other type of bias may be counteracting the treatment effect.

It is important to realize, however, that a relationship that is statistically significant may not be very meaningful or important in terms of making a difference in peoples' lives (McCloskey 1985). That is, the difference between the treatment and the control groups may be statistically significant while actually being very small in magnitude. An example might be a difference in expenditures that is just a few pennies a year on an average expenditure that is ten thousand times greater; the difference may be statistically significant, but it is of no consequence.

### ***E.3.g. Outlier analysis***

An analysis of sample outliers was completed for each of the impact variables. This analysis included an examination of descriptive statistics, extreme outliers, histograms, stem and leaf plots, and box plots for each of the impact variables. In many cases, the original questionnaires were consulted to determine if the outliers represented data entry errors or accurate, but special cases. Any data entry errors that were found were corrected.

The statistical analyses (paired t-tests, gain score, and ANCOVA) were each conducted on the data set containing all of the corrected data. In addition, a second set of tests were conducted on the data after sample outliers more than three standard deviations ("z-scores") were removed from the data. In the text, the results of the statistical analyses are reported with the outliers removed. For the paired t-tests and gain scores, the analysis with outliers removed better reflects the central tendencies of the sample. For the analysis of impacts, the results are generally consistent whether or not the sample outliers were included in the data. In the few cases where the results were not consistent, or where the magnitude of the impact differs in an important way, these differences are reported in the text.

## **F. Case Study Methods**

### **F.1. Purpose of the Case Study Research**

The objective of the case study research was to examine how and why changes occur as the result of program participation. Using the household economic portfolio model as a conceptual framework, the research focused on enterprise, household, and individual-level variables in order

to address the following research question: *“How does microcredit contribute to the observed changes within the household and its enterprises?”*

One of the most important, yet most difficult, tasks of an impact assessment is to provide convincing evidence that the measured changes, or impacts, can be attributed to the program being evaluated. While the survey results document changes in the impact variables between the two survey rounds and provide statistical evidence of any differences between clients and non-clients, the case studies are used to reconstruct the chain of events leading to those changes. By identifying the sequence of events leading from program participation to the measured impacts, the case study data complement and strengthen the survey results and can help to improve the case for attribution.

Another way that the case study research strengthens the overall case for attribution is by investigating, and possibly disproving, rival explanations for the observed impacts. If the survey results provide statistical evidence for impacts, and the case study results show that these impacts were not due to factors other than program participation, then greater confidence can be placed on the conclusion that the observed impacts were due to program participation.

Unexpected findings can occur when the variables identified in the hypotheses do not show the expected (or hypothesized) relationships or are inconsistent with the relationships identified in the conceptual model. Unanticipated findings can occur when important impacts are found which were not identified in the hypotheses or conceptual model. Case study research can probe for explanations of such unexpected and unanticipated findings.

## **F.2. Selection of Cases**

The case study research examined eleven ACP/Mibanco client households. The eleven cases were selected according to three key variables: length of participation in the ACP/Mibanco program, household income level, and client gender. Clients were first divided into two groups according to length of participation, with “new” clients having less than 24 months in the program and “old” clients more than 24 months. They were further divided into low-income and high-income groups relative to the national poverty line.

Client households were then selected based on how well they represented their respective groups. For example, low income new clients were selected whose incomes were close to the mean for the low-income group as a whole and whose time of program participation was near the mean for all new clients. One male and one female were selected within each subgroup and the cases were distributed across the three ACP/Mibanco agencies included in the survey. Due to the longevity of the ACP/Mibanco program, two additional cases were selected to represent “very old” clients. The cases were taken from the high-income/female/old-client pool, with length of participation at the upper end of the range. Table 3.4 shows the distribution of the cases across the categories.

Table 3.4. Distribution of Case Study Households, by Time in Program, Income, and Gender

	New Clients	Old Clients	Very Old Clients
High Income Clients	Case A (female) Case B (male) Case K (female) <sup>35</sup>	Case E (female) Case F (male)	Case J (female) Case M (female)
Low Income Clients	Case C (female) Case D (male)	Case G (female) Case H (male)	

### **F.3. Research Protocol**

#### ***F.3.a. Study questions and propositions***

The study questions for the case study research were driven by the need to supplement the survey findings on the study's hypotheses, to better understand impact processes, and to examine rival explanations for the measured impacts. These study questions, which were derived from the same hypotheses that drove the survey research, constituted the foundation and focus for the collection and analysis of data in the case study research. Each study question has an accompanying research proposition, which describes a hypothesized pattern of events leading from program participation to changes in the impact variable (table 3.5). The patterns specified in the research propositions are consistent with the hypotheses and conceptual model.

In general, the overall question that motivated the case study research was the following:

*What changes have occurred as a result of program participation; to whom and under what conditions did these changes occur; and why did these changes occur?*

As this overall question is too broad to be operationally useful, specific study questions and propositions related to the household economic portfolio and the impact hypotheses were developed. These questions and propositions served as a framework for questioning which guided the case study interviews.

The first three study questions examined changes in three specific areas: 1) the composition of the household economic portfolio; 2) financial and risk management behavior; and 3) intrahousehold control over resources and income. These categories were selected because they allowed for an analysis of interaction between a range of household (H-1, H-2, H-3, H-4, H-6), enterprise (E-1, E-2), and individual-level (I-1, I-3) hypotheses. Three of the remaining four study questions were more discrete in nature, focusing on changes in self-esteem (I-2), orientation toward the future (I-4), transaction relationships of the enterprise (E4a, E4b), while the final question related to client perspectives on the impacts of program participation.

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<sup>35</sup> The inclusion of case K resulted from a misidentification of the client, who was originally thought to represent a high-income/female/very-old client. During the first interview with case K, it was learned that she had been a client of ACP/Mibanco for less than one year. This misidentification was a result of the client joining an already existing lending group which had been in the program for more than 24 months.

For all of these questions, the case study research examined WHAT changes occurred, TO WHOM they occurred, HOW (or the process by which) they occurred, and WHY they occurred. Thus, data collection concentrated on gathering information relevant to the questions and propositions, uncovering the answers to the study questions, and determining whether the patterns of change exhibited by the cases matched the patterns specified in the propositions.

### *F.3.b. The interview process*

The interviews with case study informants were conducted between May and July of 1998 and August and October of 1999. Each informant was interviewed four times, two times in 1998, and twice in 1999.

During the first round of interviews, attention was given to establishing patterns of change in the impact variables. The interviews focused on changes that had occurred since the client joined the program, with particular emphasis on the changes that had occurred since the period immediately before becoming a program client. The second round of case study interviews were conducted with the same households that participated in the first round. These interviews focused on changes in key impact and moderating variables that occurred between the two survey rounds.

For both rounds of research, two in-depth interviews were held with each informant over a two-day period, with interviews lasting from 45 minutes to two hours. Interviews were conducted at the informant's home or business, depending on his or her preference. The investigator arranged the interviews around the informants' normal schedules, allowing the informants to maintain their normal daily responsibilities. The investigator attempted to arrange at least some private interview time with the client, away from the presence of other household members. In several cases, information was volunteered by more than one person in the household, such as the informant's spouse, siblings, children, and extended family members when present.

Prior to each set of interviews, the researcher reviewed each informant's credit files and survey responses. This review enabled the investigator to formulate a customized interview guide outlining questions to be asked and highlighting specific objectives and strategies for each interview. All interviews were tape recorded and the investigator took comprehensive notes, including as many details as possible. Before conducting the second interview, the investigator reviewed both the taped interview and the interview notes. Based on analysis of the recording and the notes, the researcher identified subject areas that had been overlooked as well as topics of interest that were uncovered during the first interview. A second interview guide was subsequently formulated to ensure coverage of all pertinent areas.

Table 3.5. Study Questions and Hypothesis-Driven Research Propositions

Focus	Study Question	Research Proposition
Components of the Household Economic Portfolio	Q1: Have the components of the household economic portfolio changed? If so, how, and what factors led to these changes?	P1: Participation in program services relieves a capital constraint on the household economic portfolio, which allows the household to increase one or more of its production, consumption, or investment activities. Some households will use loans to increase the base of income generating activities, leading to an increase in the flow of income from activities to resources and a net increase in the financial resources available to the household.
Financial and Risk Management Behavior	Q2: Has the financial and risk management behavior of the household or its members changed? If so, how, and what led to these changes?	P2: Participation in program services improves the financial management options available to the household by offering a reliable source of borrowed funds. Participation in program services allows households to accumulate and maintain savings and other near-liquid forms of assets, increasing the effectiveness of stage I coping strategies and helping to avoid stage II coping strategies.
Intrahousehold Control Over Resources	Q3: Have the patterns for intrahousehold control over resources and income changed? If so, how, and what factors led to these changes?	P3: Female partners are more likely to have control over the decisions related to applying for and spending a program loan if they are the named clients. Loans allocated to an income generating activity managed by the female partner will help her increase income from her activity, and her influence over the allocation of other household resources will increase over time.
Changes in Self Esteem	Q4: Have changes occurred in the client's self-esteem? If so, how, and what factors led to these changes?	P4: The receipt and use of the credit allows the client to increase his or her contribution to the material welfare of the household and the community and become better managers of resources. The client's self-esteem increases with these positive changes.
Changes in Orientation Toward the Future	Q5: Have changes occurred in the client's orientation toward the future? If so, how, and what led to the changes?	P5: The availability of a steady and reliable source of credit leads the client to have a more positive orientation toward the future in the sense that the client is better able to formulate and more effectively implement proactive financial and economic plans.
Changes in Transaction Relationships	Q6: Have changes occurred in the transaction relationships of the microenterprise? If so, how, and what factors led to these changes?	P6: Participation in program services relieves a capital constraint on the enterprise, which improves the ability of the enterprise to buy inputs in bulk, reach new input and output markets, and maintain a higher and/or more reliable flow of outputs.
Reported Impacts and Client Perspective	Q7: What changes does the client perceive as a result of program participation, and how did those changes occur? What value does the client place on the changes, program services?	P7: Clients perceive positive economic and social changes in their lives as a result of program participation. Clients value loans as useful tools which help them to reach economic goals, thereby increasing the economic well-being of their households.

#### **F.4. Case Study Database**

To organize the data from the case study research, a case study database was created for each household included in the study. This database holds the evidence that was used in the analysis of the case studies. The database consisted of the following components:

1. Summary table of credit data;
2. Summary table of survey data;
3. Narrative summary of history of credit transactions;
4. Hand written notes from each interview session, arranged by date of interview;
5. Word processed notes from each interview session, arranged by date of interview;
6. Transcriptions of tape recorded interviews;
7. Narratives containing open-ended answers to study questions.

The seventh component, narrative answers to the study questions, is a critical feature of the case study database. Started in the field and finished when the transcriptions of the interviews were completed, the narrative answers to the study questions were written as open-ended answers based on the evidence collected prior to and during interviews. There is one narrative for each case which integrates and synthesizes information from the interviews into answers to the seven study questions.

#### **F.5. Analysis of the Case Study Data**

The case study data were analyzed using a variant of pattern matching called the program logic approach. With pattern analysis, patterns in the empirical evidence are compared to the patterns predicted in the study propositions. If the patterns match, there is evidence in favor of the study propositions and the internal validity of the research is strengthened.

The program logic model is a pattern-matching analysis that includes an element of time-series analysis, allowing an examination of changes in the dependent variables over time. In this model, the program intervention is posited to lead to immediate and intermediate outcomes, which in turn lead to the final impacts. This approach, as described by Yin (1994), allows for the examination of the cause and effect relationships between independent and dependent variables over time.

Since the hypotheses that drove the case study research, and hence the study questions and propositions, are derived from the household economic portfolio conceptual framework, the program logic approach is appropriate for the data gathered during the research. Each of the study propositions posits a chain of events leading from program participation to the specified final impact. Analysis of the data in the case study database focused on comparing the empirical results of the study to the hypothesized cause and effect relationship between the intervention (credit) and changes in a range of dependent variables (risk management, investment activities) over time.

## **G. Integration of Findings**

The mixed method approach of combining statistical hypotheses tests with qualitative interview data has the advantage of bringing two complementary approaches to a single study. However, there is a challenge in integrating the findings of the analysis of the survey data with the findings of the analysis of the case studies. The approach taken here is to organize the reporting of the results around the structure provided by the set of impact hypotheses. Separate sections are provided for each of the three levels of hypotheses: enterprise, household, and individual. The results of the statistical tests of the impact hypotheses are presented and, where applicable, a relevant theme from the case study data is developed and reported alongside the statistical results. In the next section, we set the stage for reporting on the hypotheses by providing descriptive statistics from the survey data and qualitative profiles of the study respondents.



## Section 4 – Households, Their Enterprises, and Credit

This section provides a first look at the people and enterprises in the sample. It is based on the data collected for the study. The purpose of the section is to give the reader a sense of who the respondents are and what their households and enterprises are like. By answering some basic questions about the sample, the section sets the stage for interpretation of impact analysis results. The actual impact results follow in sections five through seven; the information presented here is intended to paint a descriptive picture. The four main questions addressed in the section are the following:

- Who are the entrepreneurs in the sample?
- What are the characteristics of their households?
- What kinds of enterprises do they have?
- How does credit fit into their financial management practices?

The organization of the section follows these questions. The first section uses the 1997 survey data to describe the characteristics of the entrepreneurs and their households, including information on income sources and poverty levels. This section concludes with profiles of the case study households. The second section focuses on the enterprises in the sample, providing descriptive information on enterprise sector, revenue, employment, location, and other characteristics.

The third and final section explores how households use microenterprise credit, beginning with a description of the characteristics of the ACP/Mibanco loans held by the client households and ending with an analysis of program attrition. The credit section also examines the use of credit from sources other than ACP/Mibanco and concludes with descriptive accounts of the case study households' financial management behavior.

### A. The Entrepreneurs and Their Households

#### A.1. The Sample of Households

The final panel consisted of 518 respondent households.<sup>36</sup> Of these, 305 were client households and had received one or more ACP/Mibanco loans prior to the baseline survey. The control group consisted of 175 households that never received an ACP/Mibanco loan. The remaining 38 respondents were classified as “new entrant” households, because they received a first ACP/Mibanco loan between the baseline and second-round surveys. The description of the households provided in this section is based on the survey data from the 518 client and non-client households as well as on data from interviews with the eleven case study households.

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<sup>36</sup> There were 529 households that participated in both the 1997 and the 1999 surveys. The eleven households that participated in the case studies were removed from the final survey data set because their participation in the case study interviews could have biased their 1999 survey responses.

## A.2. Household Characteristics

All of the households included in the sample reside in metropolitan Lima and have at least one microenterprise. The basic demographic characteristics of the respondents and households are provided in table 4.1. The typical respondent is female, about 40 years old, and married or living with a partner in a conjugal relationship. The typical respondent household has about five members, which is the same as the average household size for Lima overall (Cuanto Institute 1995). On average, three of the five household members are economically active.

The majority of households, or 81 percent, have minor children living at home, and the average number of minor children is 1.8 per household. Education is a high priority for sample households, with nearly all children ages seven to 16 enrolled in school. Parents apparently value education for their older children as well. While less than 20 percent of respondents went beyond a secondary education themselves, they reported that 47 percent of their children who were over the age of 18 had completed at least some post-secondary education by 1997.

Table 4.1. Basic Demographic Information on Respondents and Their Households

	Treatment (n=305)	Control (n=175)	New Entrant (n=38)	Total (n=518)
Age (years)	42.6 <sup>1</sup>	41.1 <sup>2</sup>	37.3	41.7
Female (percent)	62.3	57.1	65.8	60.8
Married (percent)	84.3 <sup>3</sup>	72.0	78.9	79.7
Household Size (members)	5.1 <sup>3</sup>	4.6	5.1	4.9
Economically Active Members	3.3 <sup>3</sup>	2.8	3.0	3.1
Dependency Ratio	1.69	1.89 <sup>4</sup>	1.90	1.77
Education of Respondent				
None	1.6	1.1	2.6	1.5
Primary	28.2	33.2	39.5	30.7
Secondary	49.5	46.8	44.8	48.3
Post Secondary	20.6	18.8	13.2	19.5
Children Age 7-16 Enrolled	97.3	97.8	100	97.7

Source: 1997 survey data.

<sup>1</sup> Significantly different from the mean for the new entrant group at  $p < .01$ .

<sup>2</sup> Significantly different from the mean for the new entrant group at  $p < .05$ .

<sup>3</sup> Significantly different from the mean for the control group at  $p < .01$ .

<sup>4</sup> Significantly different from the mean for the treatment group at  $p < .05$ .

Treatment group households, with an average of 5.1 members, are significantly larger ( $p < .01$ ) than control group households (4.6 members) (table 4.1). They also have an average of 3.3 economically active members, more than the 2.8 workers for the control group ( $p < .01$ ). Dependency ratio, which is a consumer-to-worker ratio calculated by dividing the total number of household members by the number of household members who are economically active, was significantly lower ( $p < .05$ ) for the treatment group than for the control group (table 4.1). This indicates that on average, control group households have fewer workers for the same number of household members. Some of these differences may be related to the incidence of marriage;

only 72 percent of the control group respondents are married, which is significantly lower than the 84 percent marriage rate for treatment group respondents ( $p<.01$ ). Differences in household size and composition are accounted for in the impact analysis through the use of per capita measures on variables such as income and food expenditures and the inclusion, when relevant, of moderating variables for marital status and number of economically active household members.

The new entrant group is distinctive in some ways, yet shares similarities with each of the other groups. New entrant group respondents are an average of five years younger than those in the treatment ( $p<.01$ ) and control ( $p<.05$ ) groups (table 4.1). Though the members of the treatment group would also have been younger at the time they first received ACP/Mibanco credit, their mean age at the time of their first loan was still substantially higher at 41.3 years. The new entrant group also has a slightly higher proportion of women (66 percent) than the treatment (62 percent) and control (57 percent) groups, which could indicate that ACP/Mibanco attracted a disproportionate number of female clients during the study period. It might also indicate that women tend to leave the program at a slightly higher rate.

Household size for new entrants was higher than that for control group households, and nearly equal to that for the treatment group (table 4.1). The same was true for number of economically active household members and civil status; new entrant households had more economically active members. Measures for dependency ratio, on the other hand, showed that the new entrant group was closer to the control group on this variable. Finally, a higher percentage of new entrants were married than controls.

### **A.3. Sources of Income**

The households in the sample rely on a number of economic activities, with microenterprises being the most frequently reported source of income within the household economic portfolio. In 1997, a total of 1607 income sources were reported by the 518 households in the sample, for an average of slightly more than three income sources per household (table 4.2).

Table 4.2. Sources of Household Income (n=518 households)

Type of Income Source	1997		1999	
	Number	Percent	Number	Percent
Microenterprise Income	856	53.3	873	53.4
Income from Full-Time Work	450	28.0	424	25.9
Income from Part-Time Work	115	7.2	111	6.8
Transfer/Remittance Income	70	4.4	100	6.1
Rental Income	55	3.4	72	4.4
Retirement/Pension Income	55	3.4	47	2.9
Other <sup>a</sup>	6	0.3	9	0.5
Total - All Income Sources	1607	100	1636	100

Source: 1997 and 1999 survey data.

<sup>a</sup> "Other" category includes dividend income, income from profit sharing, and agricultural income.

Not only is microenterprise income the most frequently cited source of household income, it also contributes the highest monetary value: microenterprise income represents 65 percent of total annual household income for households in the sample. Wage income, which accounts for 28 percent of total income, is the second most important source. Thus, microenterprise income and work for wages provide over 90 percent of the total annual income for the households in the sample. The proportions of household income generated by microenterprises and wage work were similar for all three comparison groups (treatment, control, and new entrant). In fact, the only income source on which the groups differed significantly was rental income: the treatment group earned about three percent of income from rent, while the control group earned only one percent from this source ( $p < .05$ ).

#### A.4. Income Levels

The households in the sample had an average annual income in 1997 of about S/20,700, or US\$7,810 (table 4.3).<sup>37</sup> At about S/24,260, average annual income for the treatment group was over half again as large as the average incomes reported by the control and new entrant groups ( $p < .01$ ). The average number of income sources (3.3) for the treatment group was higher than for the control group ( $p < .01$ ) and for the new entrant group ( $p < .05$ ) (table 4.3).

Table 4.3. Household Income and Number of Income Sources, by Participation Category

Participation Category	Annual Income (soles)	Number of Income Sources
Treatment (n=305)	24,259 <sup>1</sup>	3.3 <sup>2</sup>
Control (n=175)	15,681	2.8
New Entrant (n=38)	15,386	2.7
Total	20,710	3.1

Source: 1997 survey data

<sup>1</sup> Significantly different from the means for the control group and new entrant group at  $p < .01$ .

<sup>2</sup> Significantly different from the means for the control group ( $p < .01$ ) and new entrant group ( $p < .05$ ).

It is worth considering at this point what the higher average income for the treatment group implies for the impact assessment. On the one hand, it indicates that the treatment and control groups were not comparable on this important variable. On the other hand, if microcredit actually does have an impact on household income, then there is reason to expect that a difference in income would already be found in the 1997 data. At least some of the observed difference might be attributable to the impacts of microcredit. After all, the treatment group had already received program services by the time the 1997 income measurement was made.

Based on the 1997 evidence alone, however, it is not clear whether the ACP/Mibanco credit has had an impact on income.<sup>38</sup> The income differences between the treatment group and control

<sup>37</sup> The exchange rate at the time of the 1997 survey was S/2.65 = US\$1. At the time of the 1999 survey, the exchange rate was S/3.40 = US\$1.

<sup>38</sup> In fact, impact evaluations using cross-sectional data are based on the analysis of differences in the impact variable (e.g. income) for the treatment and control groups at a single point in time. Impact findings from a cross-

group might be due to other, possibly unmeasured, variables. For this reason, the method for impact evaluation followed in this study is based on an analysis of the *changes* in income that occurred between 1997 and 1999. In addition, the analysis of the impact of microcredit on household income includes a comparison of subsets of the treatment and control groups that have similar levels of income in 1997. Moreover, the effect of differences in initial income levels is incorporated into the ANCOVA analysis variables by including, where relevant, a moderating variable to reflect the baseline level of household income.

It is also very interesting to note the similarities between the control group and the new entrant group. In 1997, before any of them had received ACP/Mibanco credit, the households in the new entrant group were in many ways comparable to the households in the control group. There are no significant differences between these two groups in levels of household income or number of income sources, for example. Because the households in the new entrant group provide the best examples of conditions before (1997) and after (1999) receipt of ACP/Mibanco credit, they are treated as a separate group in the impact analysis. The baseline similarities between the control group and the new entrant group imply that later differences in the outcome variables are more likely attributable to microcredit than to selection bias.

#### **A.5. Poverty Levels**

An assessment of the poverty levels of the households in the sample reveals that only about one-third of the households in the sample are considered poor by Peru's national standard. Just as with income levels, the analysis of poverty levels indicates that the treatment group is better off than the control and new entrant groups. Only around 25 percent of the treatment group households were under the poverty line in 1997, compared to nearly 40 percent of the control group (table 4.4). Very few households from either group met the criteria for extreme poverty.

Two methods were used to assess the poverty levels of the households in the sample. One method is based on the national poverty line as established by the Living Standards Measurement Survey (LSMS) of 1997. The LSMS poverty line is a national standard that uses household expenditure data as a proxy for household well being. The measure is based on a minimum level of expenditure per person required to meet basic needs for food, clothing, housing, health, transportation, and education. These expenditures comprise what is termed a "basic consumption basket," which in Peru equaled S/2,440 (US\$919) per person per year in August 1997. Households in the sample were classified as poor if their annual per capita expenditures on the items in the basic consumption basket did not exceed that level.

The second method attempts to assess income poverty based on global standards related to purchasing power parity (PPP). This global standard, which was developed by the World Bank, compares per capita household income to income levels equivalent to approximately US\$1 per person, per day and US\$2 per person, per day. The "\$1 a day" poverty line is equal to the mean national poverty line of ten low-income countries and the "\$2 a day" poverty line matches the same for ten lower middle-income countries (World Bank 2000). Since the purchasing power of

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sectional analysis are less credible than impact findings from a longitudinal analysis, primarily because there is no point of reference from which to assess the observed levels of the impact variables.

the equivalent of US\$1 varies by country, these lines must be adjusted for each country using purchasing power parity estimates from the United Nations' International Comparison Project. This results in poverty lines that reflect price structure differences between countries. For Peru in August 1997, the \$1 a day line is equal to an annual per capita income of S/1,354 and the \$2 a day line is S/2,708 per person per year.<sup>39</sup>

Table 4.4. Household Poverty Levels (percentage)

	Treatment (n=305)	Control (n=175)	New Entrant (n=38)	Total (n=518)
National LSMS				
Non-Poor	73 <sup>1</sup>	62 <sup>2</sup>	45	67
Poor	27	38	55	33
Global Standard				
Above \$2 a Day	78 <sup>1</sup>	57	45	69
Above \$1 a Day	96	89	89	93
Below \$1 a Day	4	11	11	7

Source: 1997 survey data.

<sup>1</sup> Significantly different from the control group and new entrant group at  $p < .01$ .

<sup>2</sup> Significantly different from the new entrant group at  $p < .10$ .

The majority of respondent households were living above the poverty line in 1997 (table 4.4). With two-thirds of the sample above the LSMS poverty line, the poverty rate for the sample closely matched the overall poverty rate for Lima for that year (Webb and Fernández Baca 1999). It is interesting to note that the percentages of households considered “non-poor” by the LSMS standard are comparable to the percentages of households living above the \$2 a day global standard. Thus, these two standards produce similar results.

Under both the LSMS standard and the \$2 a day standard, a lower percentage of households in the treatment group are poor compared to the control group and new entrant group ( $p < .01$ ). While both the LSMS and the “\$2 a day” measures indicate that the new entrant group has a higher percentage of households in poverty than the control group, the difference in poverty levels between these two groups is only statistically significant for the LSMS measure ( $p < .10$ ). Table 4.5 provides detailed information on mean and median incomes for the three participant categories.

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<sup>39</sup> For the specific steps followed in the calculation of the \$1 a day and \$2 a day lines, see appendix 3.

Table 4.5. Household Annual Income, by Poverty Levels (soles)

	Treatment (n=305)		Control (n=175)		New Entrant (n=38)		Total (n=518)	
	Mean	Media	Mean	Media	Mean	Media	Mean	Media
National LSMS								
Non-Poor	26,083	21,190	17,897	14,126	17,882	14,400	23,133	19,080
Poor	19,380	17,848	12,183	10,700	13,366	12,020	15,843	13,200
Global Standard								
Above \$2 a Day	28,000	23,145	20,621	17,400	21,979	20,400	25,634	21,360
Above \$1 a Day	24,987	20,960	17,067	13,530	16,762	13,740	21,860	18,000
Below \$1 a Day	6,435	5,438	4,942	4,500	3,687	3,888	5,300	4,910

Source: 1997 survey data.

#### **A.6. The Case Study Participants<sup>40</sup>**

The eleven individuals who consented to participate in the case study research represent a cross-section of Lima's commercial sector entrepreneurs. The men and women who shared their time and knowledge come from diverse backgrounds and have followed different paths to their current livelihoods. For all of their heterogeneity, however, the informants have much in common. They share similar concerns, struggle with the same economic realities and institutional hurdles, and have similar goals: to support their families and work toward a more stable and comfortable future for themselves and their children.

##### ***A.6.a. Overview of case study households***

Case study informants were selected according to poverty level, gender, and length of participation in the ACP/Mibanco credit program. All of the case study informants were clients of ACP/Mibanco in 1997 and all of them ran commercial microenterprises. As table 4.6 indicates, the informants ranged in age from 30 to 61, and all but one of them had children living in the household. Seven of the households had incomes above the LSMS poverty line in 1997 and four of the households had incomes below the poverty line.

<sup>40</sup> Names and other identifying characteristics of the case study informants have been changed or omitted.

Table 4.6. General Characteristics of Case Study Informants and Their Households

Name	ID	Age	Education Level	Children/ Total HH Members	Age Range of Children	Primary Enterprise
Non-Poor Households						
Ana	A	37	Secondary	5/7	1-17	Home-Based Grocery Store
Jorge	B	38	Secondary	3/5	6-11	Home-Based General Store
Laura	K	30	Secondary	0/4	n/a	Home-Based General Store
Dolores	E	31	Secondary	2/4	8-12	Formal Market Processed Meats
Efraín	F	53	Secondary	5/7	23-28	Informal Market Housewares
Jacinta	J	61	Primary	2/4	24-25	Formal Market Staple Foods
Martina	M	45	Primary	1/3	3	Home-Based Grocery Store
Poor Households						
Pepa	C	30	Secondary	5/7	1-11	Home-Based School Supplies
Pablo	D	36	Secondary	4/6	9-16	Formal Mkt Audio/Video
Dora	G	41	Primary	3/11	9-19	Mobile Cart Hot Beverages
Raymund	H	53	Secondary	4/6	1-12	Formal Market Clothing Sales

Source: 1997 survey data.

Informants had received their first loans from ACP/Mibanco as early as March 1994 and as late as a few months prior to the first round of the survey in August 1997 (table 4.7). At the time of the first survey, their loan sizes ranged from S/800 to S/6,400 (about US\$300 to US\$2,400). Not all of the informants had current loans at the time of the second round of the survey. The dates of their last loans prior to August 1999 are listed in the table.

Table 4.7. Credit Data for Case Study Informants

Name	ID	First Loan (mm/yy)	Loan Size in 8/97 (soles)	Last Loan Before 8/99		Years in Program by 8/99
				Date (mm/yy)	Size (soles)	
Non-Poor Households						
Ana	A	3/96	2,300	5/99	3,300	3.5
Jorge	B	10/96	1,300	5/99	3,050	3.0
Laura	K	3/97	800	6/99	3,000	2.8
Dolores	E	3/95	6,400	5/98	5,500	3.1
Efraín	F	12/94	1,800	4/99	2,600	4.8
Jacinta	J	10/94	4,250	5/99	4,000	5.1
Martina	M	3/94	1,500	7/99	2,200	5.7
Poor Households						
Pepa	C	3/96	800	2/98	950	2.3
Pablo	D	6/97	1,100	7/99	2,300	2.6
Dora	G	10/94	1,500	7/99	800	5.0
Raymundo	H	4/95	3,000	4/99	2,500	3.4

Source: ACP/Mibanco credit files.



### *A.6.b. Case study profiles*

The profiles in this section introduce the case study participants and provide a snapshot glimpse of their lives as individuals and as families, the nature of their enterprises, and some of the key features of their household and business management strategies. The descriptions are not comprehensive, but rather provide a thumbnail sketch of who the informants are, what their goals are, and what strategies they are employing in order to reach those goals.

**Ana** (case A) runs a small grocery store out of her home. She sells a variety of items including dry goods such as flour, beans, and noodles, canned meats, soaps and detergents, and fresh fruits and vegetables. As is the case with many such enterprises in Lima, her customers are primarily from her neighborhood. Ana has five children, aged two to eighteen. Her husband, who has a job with the military that often takes him on extended duty to other parts of Peru, also drives a taxi when he is in Lima. Ana began to take loans after learning of ACP/Mibanco through a magazine distributed by Coca-Cola.

Ana and her husband see their house as their most important asset, and the economic foundation of future household well being. Their plan, which they are slowly realizing, is to use their house for as many income-generating activities as they can. To this end, they have converted a garage into a storefront (which is now rented out) and are in the process of adding two floors of apartment units. When finished, almost every square foot of the house will be devoted to income-generating activities, save for their small living quarters.

The financing of these housing improvements has been credit intensive. Loans from six sources, including three formal banks, a credit cooperative, an entity that lends housing materials in-kind, and a relative, have been used, sometimes concurrently, to finance this activity. Though they have made significant improvements to their home, the stress related to high levels of debt has weakened the family fabric. The constant sacrifice and deprivation stemming from the need to cut corners and save every penny for loan payments has led to stress-related arguments and rifts in Ana's relationships with both her husband and her children.

Like Ana, **Jorge and Patricia** (case B) run a small store out of their home. They sell a similar range of food products, as well as clothing, school supplies, and small gifts. The couple have three daughters who live with them (Patricia has two grown sons from a previous relationship who live elsewhere). Their home is in the middle of a newer squatter settlement on the outskirts of Lima.

Jorge and Patricia's family is an excellent example of a household that has chosen entrepreneurship over wage employment as a livelihood path. For many years, Jorge earned a salary as a factory worker while Patricia ran the small grocery business out of their home. In the early 1990s, as real wages in the formal sector plummeted, Jorge began to supplement his income by selling plastic containers and other items as an itinerant vendor. After a time, the couple decided that the wage from the factory job was not worth it, and he joined her in the store. Together, they built the store into a successful enterprise that has allowed them to meet the family's needs, improve their house, and purchase more land. Their entrepreneurial success has

allowed them, in turn, to provide inspiration and material support to Patricia's two sons, who now operate a thriving business of their own.

**Laura** (case K) is an able entrepreneur who gained skills and knowledge as a child while working alongside her parents in a small-town market. Laura's husband is also an independent entrepreneur who repairs appliances in private homes around Lima. When she and her husband invaded the land where they now live, she was obliged to stay on the property at all times to protect it from thieves and assert *de facto* property rights. Laura's upbringing made starting a home-based enterprise a natural choice for her. Over time, she has employed the entrepreneurial skills she learned while growing up to transform what was once a tiny storefront selling a few food products into a well-stocked general store that sells a wide range of perishable and non-perishable food items, school supplies, personal hygiene products, medicines, and clothing.

One of the keys to Laura's success has been her productive use of the full range of financial tools available to her. She is highly conscious of the varying costs and benefits of both formal and informal financial products, allowing her to efficiently mix and match these products to her changing needs and preferences. Employing loans from two sources, different forms of *juntas*,<sup>41</sup> and supplier credit, she has built up and diversified her inventory and invested in productive fixed assets, strengthening her business and her household's overall economic position.

**Dolores** (case E) comes from humble roots, having grown up in a squatter settlement helping her parents struggle to overcome poverty through their small businesses. Like Laura, she learned entrepreneurial skills at her mother's side, helping to prepare and sell spices. Over time, her parents built successful businesses, which they passed on to Dolores and her brother when they retired. Dolores continued to build the processed meat business that she inherited, and today sells wholesale/retail in one of the largest and best-established markets in their district. Her husband, whom she met in the same market, has a stall from which he sells non-perishable grocery items. They are both confident and competent entrepreneurs, who, although they grew up in relative poverty, have managed to work their way into the middle class. Their daughters attend exclusive schools, they employ a servant, and they live in a modern-looking house that they built over many years.

Dolores, too, is adept at employing a range of financial tools to her benefit, frequently using a mix of loans, supplier credit, consumer credit, and *juntas* to reach the goals that she and her husband set for their household and enterprises. Loans from formal sources are used to take advantage of sales and discounts available only through cash purchases. When short on capital, they purchase goods from suppliers on credit (though at higher prices). Consumer credit is utilized to purchase high-value, productive, enterprise fixed assets such as freezers or display cases. Depending on household and business needs, *juntas* serve as either a general fund for household expenses, to make loan payments, for enterprise inventory, or as a savings instrument for large purchases. This judicious implementation of business strategies that incorporate available financial tools has helped Dolores and her husband to build their two businesses into prosperous wholesale/retail operations.

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<sup>41</sup> *Junta* is the local name for a rotating savings and credit association (ROSCA). For more information, see chapter two, section D.3.a.

**Efraín** (case F) is a one-time factory worker who lost his job when the kitchenware company where he worked closed. To support his family, he used his savings and an in-kind severance payment of kitchen equipment to start a small kitchenware enterprise. Over the years he has expanded his lines, and today he sells all manner of household items from a cart in an informal market near his home. Though he has not become rich, his enterprise has allowed him to feed and educate his children and care for his invalid wife. Now that his children are grown and support themselves, he is taking steps to improve the household's economic position with a view toward a self-sufficient retirement for himself and his wife. To this end, he is investing in housing improvements and plans to establish a formal shop in a commercial location.

Compared to Laura and Dolores' complex financial management strategies, Efraín's practices are relatively simple. Eschewing informal financial tools such as *juntas* and moneylenders because he perceives them to be too risky or expensive, he prefers to rely only on loans from ACP/Mibanco and revenue from his enterprise to move toward his goals. When the household expenses were higher, Efraín simply invested loans in inventory and used the revenue generated to cover expenses and repay loans. Now that household expenses are lower and no longer sap enterprise revenue, he investing heavily in the construction of rental rooms. He also plans to use loans to establish a new store. Between the rental rooms and the new store, he is steadily building a more stable economic foundation that will increase their household security as he and his wife grow older.

Like Efraín, **Jacinta** (case J) has changed her livelihood strategy as her children have become independent. For many years, she used income from her enterprise to supplement the steady paycheck her husband Beto earned as a factory worker. While he covered household consumption needs, Jacinta used her income to finance high-quality education for her children. To this end, she managed her business much as Efraín had, investing loans (and *juntas*) in inventory and using the proceeds to cover education and other expenses and to simply maintain the business.

Now that her children have secured excellent jobs as a doctor and a banker and become financially independent, the household's livelihood strategy has changed completely. No longer responsible for household expenses (they are covered by the children), Jacinta and Beto (Beto quit his low-paying job to assist his wife) are investing a great deal of energy and capital into her enterprise. In a whirlwind of activity, Jacinta sold her old stall, used the proceeds to buy a parcel in a new and larger market, and built a modern stall using both in-kind and cash loans from formal sources. While their daughter has repaid the loans from her salary, Jacinta and Beto have poured revenues back into inventory and used short-term supplier credit to quickly transition from retail to wholesale/retail sales.

**Martina and Mario** (case M) are an older couple, nearing their fifties, who have a young son. Like Efraín, Mario lost his long-time factory job when his company went bankrupt. Unable to find employment that paid a living wage, Mario began to do odd jobs. His earnings were intermittent and small, and the home-based grocery store that Martina started as a side business became the primary source of income for the household. This shift of economic dependence to her enterprise was a shock, and household economic demands began to deplete her capital.

As the store's inventory dwindled, Martina and Mario turned to ACP/Mibanco for working capital. Through prudent use of loans from ACP/Mibanco, Martina was able to staunch the outflow of capital and began to build her business back up. Now, in addition to borrowing from ACP/Mibanco, Martina also regularly participates in *juntas* and is a member of a cooperative bank. Complementary use of these tools has helped her to squeeze more income from the store, allowing the household to utilize income from other sources to pursue their primary objective, which is to improve their home.

Now that the business is healthy again, they are once again making progress on their house. For them, their house is everything: an income-generator, an insurance policy, and a pension plan. Over the years, they have built several rental rooms. These rooms generate income that helps them to meet daily household needs. In the future, they plan to build more rooms, convert their garage into a restaurant, and build a third floor that will serve as a hostel. They believe that every such investment provides them with more economic security and puts them in a more favorable position to face the future.

When **Pepa** (case C) was first married, she depended wholly on her husband. Her only economic contribution to the household was the food she earned as a member of a communal kitchen. Wishing to contribute more, she asked her husband for capital to start a school supplies/gift store in her home. He provided her with a few *soles*, and she began the store with a handful of items. Pepa heard about ACP/Mibanco as she was struggling to build up her store with the intermittent and meager sums that her husband would give her at his discretion. Tired of depending on him, she began taking loans and built up both her business and her self-sufficiency, eventually starting a second enterprise in a nearby market.

Soon after Pepa established her second business, complications resulting from the birth of her fifth child confined her to her bed and kept her from working. While she was down, her husband, without her knowledge, took a loan from ACP/Mibanco that he did not repay. When she was well enough to work again and applied for a loan to recapitalize her businesses, ACP/Mibanco denied her application. Without credit, she was forced to sell her freezer and pawn her washing machine.

Pepa has since turned to creative ways of raising working capital. Her main sources of funds are *juntas*, which she organizes and manages. As the manager, she gets the first installment, guaranteeing herself the equivalent of an interest-free loan. Apart from *juntas*, Pepa sells items on layaway, collecting payments from customers until they have paid for an item in full, at which time she purchases the item and delivers it. In the meantime, she uses the accumulating funds to purchase other goods for sale. Cosmetics sales provide yet another source of capital. Pepa receives products from the company on credit. If she sells the items quickly, she can then invest the money in other, fast-moving inventory until the payment is due in thirty days.

**Pablo and Bety** (case D) are relatively recent arrivals to Lima, having migrated there some fifteen years ago. They followed an entrepreneurial path from the outset, selling lollipops and other candy and snack items on the street. As time passed and they became more oriented to the city, they began to sell pre-recorded cassettes, in time renting an informal location on the street where they set up their displays. They were very successful, and within a few years managed to

purchase a house and a microbus with money they had saved. At the height of their success, however, the mayor of the district where they operated began a campaign against street vending, forcing them to start anew in an unfinished market that their vendors association had been building for its members. During this period, sales dropped drastically and levels of inventory and working capital diminished. To offset this decline, they began to borrow from ACP/Mibanco.

Since that time, credit has become an important component of Pablo and Bety's financial management strategy. As the new market was improved and began to attract customers, they used ACP/Mibanco credit to build up their cassette inventory and diversify their merchandise to include other high-margin, fast-moving items such as watches, compact discs, and videocassettes. Now that business is brisk again, they are taking steps to both expand and stabilize their income base. Bety, who now runs the business while Pablo drives a taxi, has been building her inventory for two years in order to open another cassette business. They plan for their two young sons to operate the new business, in hopes that the experience will help them learn to be responsible while contributing economically to the household. They have also used loans to prepare a space for a home-based grocery store, a step that will allow Pablo to leave the risky taxi business.

**Dora** (case G) is also a migrant whose first entrepreneurial experience was as a street vendor. After she was married, she began to sell boiled potatoes and eggs to help make ends meet. She soon had children, and switched to selling herbal tea (*emoliente*) from a cart in a market close to her home because the business allowed her to make money while caring for her children. She has sold *emoliente* nearly every day for twenty years, and though it is backbreaking work and has caused debilitating arthritis, it has enabled her to provide the lion's share of the family's income over the years.

The family has a second enterprise, a clothing stand that Dora helped her eldest son to establish many years ago. It was for this business that Dora began to take loans from ACP/Mibanco. Through prudent investment of loans and hard work, she and her son built the stand into a successful enterprise. Several years ago, however, due to a forced relocation and subsequent mismanagement by her increasingly irresponsible son, the business nearly failed and Dora had a difficult time repaying loans. In response, Dora moved the shop to a more favorable location, stripped her son of administrative duties, and stopped borrowing in order to protect herself. The business languished until her two younger sons took it over. First using money from a children's *junta* and later using loans to invest in inventory, they reinvigorated the enterprise. Now that the business is back on track, Dora is working toward her dream of finishing her house.

**Raymundo** (case H) sells clothes in a large, well-established market. He comes from a family of clothing vendors, and has sold clothes nearly all his life. His clothing shop is the only income source for the family, employing Raymundo full-time while his wife and children help out when needed.

Like Dora, Raymundo also found himself facing a drop in enterprise revenue that hindered timely repayment of loans. Unlike Dora, he was not able to keep up. After taking large loans from both ACP/Mibanco and another bank, revenue declined and he was unable to make timely

payments on either loan. Though he has since repaid both loans, the experience left him with both a blemished credit record and a bad taste in his mouth for borrowing. Raymundo is no longer a client of ACP/Mibanco or any other microenterprise services organization.

Raymundo's business has suffered because he no longer has the purchasing flexibility that he had when his working capital was augmented by loans. When he had access to a reliable source of credit, he would split his clothing purchases between wholesalers and producers because each offered distinct advantages. At the wholesale market, though he has to pay cash, Raymundo is able to buy clothing of higher quality and select the brands, styles, and sizes that he needs. The producers, on the other hand, though they provide clothes on credit, sell a lower-quality product and do not allow him the option of choosing the specific styles and sizes that he needs. Now that he does not have access to loans, Raymundo is forced to rely almost exclusively on the producers, making it difficult to compete with clothing vendors who maintain a more varied inventory.

In summary, the case study informants are commercial-sector entrepreneurs who run a diverse range of enterprises. Some are more successful than others, but they all rely on their microenterprises in order to generate at least some of the household income. At the end of this section, we will return to these case study households to examine their financial management strategies in more detail. We now turn back to the survey data to describe the characteristics of the microenterprises in the sample.

## **B. Their Microenterprises**

### **B.1. The Sample of Microenterprises**

This section provides a general description of the microenterprises in the sample. For each of the 518 households included in the final sample, detailed enterprise data were collected for up to three of the household's microenterprises. Data were collected on variables such as enterprise revenue, fixed assets, employment, and transaction relationships. In addition to the comprehensive information collected on up to three enterprises per household, data on enterprise fixed assets were collected for any additional (over three) microenterprises associated with the households in the survey.

Comprehensive information was collected on 786 enterprises in the baseline survey and on 759 enterprises in the second-round survey. In order to distinguish the microenterprises within a single household, the enterprises were classified into three categories: primary, secondary, and tertiary. The primary enterprise is the enterprise for which the ACP/Mibanco loan is received or,

for the non-client households, the enterprise that was matched on neighborhood and sector.<sup>42</sup> There were a total of 508 primary enterprises in 1997 and 458 primary enterprises in 1999.<sup>43</sup>

The enterprises in the sample generally fit the official definition for a microenterprise in Peru: ten or fewer workers, annual revenue of US\$50,000 or less, and fixed assets of US\$200,000 or less. Virtually all of the enterprises in the sample had fewer than ten workers, with primary enterprises averaging just over two employees per enterprise. The average annual revenue for primary enterprises in the sample was S/56,520 (about US\$21,325). Only eight percent of all microenterprises in the sample earned over US\$50,000. The average value of enterprise fixed assets in the primary enterprise was S/3,480 (about US\$1,310).

## **B.2. Enterprise Sector**

The enterprises in the sample are categorized into three sectors, according to their predominant type of economic activity: commercial, service, and industrial. Commercial sector enterprises trade in all manner of goods, ranging from candy and trinkets to high value items such as appliances. The bulk of them, however, sell perishable and non-perishable food items. Service sector enterprises are also often food-oriented, with many selling prepared foods in fixed locations such as restaurants, from their doorsteps or street corners, or even delivering meals to workers in office buildings or factories. In addition, a substantial proportion of service sector enterprises are transportation-related, mainly taxis and small buses (*combis*). Finally, many industrial sector enterprises produce clothing or clothing-related items, with smaller concentrations of enterprises producing wood and metal products, such as furniture, or manufacturing foodstuffs such as bread or cheese.

The majority, or 78 percent, of primary enterprises in the sample are in the commercial sector, followed by the service and industrial sectors (table 4.8). The treatment, control, and new entrant groups have similar sectoral distributions. In the full sample of 786 microenterprises, enterprises in the service sector become more common. This is more consistent with the available data on the sectoral distribution of Lima's microenterprises, which indicate that slightly more than half are in the service sector, 37 percent are in the commercial sector, and less than ten percent are in the industrial sector (Webb and Fernández Baca 1999). Nevertheless, the sample for this study is more heavily weighted toward commercial sector enterprises than the overall population of microenterprises in Lima.

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<sup>42</sup> For additional information on the classification of enterprises as primary, secondary, and tertiary, see the chapter three, section D.3.

<sup>43</sup> In 1997, 508 of the 518 respondents had a primary enterprise. By the 1999 survey, 50 of the 508 no longer managed that or any other enterprise, resulting in a sample of only 458 primary enterprises for 1999.

Table 4.8. Sector of Microenterprises (percentage)

	Treatment		Control		New Entrant		Total	
Sector of Enterprise	Primary (n=296)	All (n=483)	Primary (n=174)	All (n=247)	Primary (n=38)	All (n=56)	Primary (n=508)	All (n=786)
Commercial	77.7	60.2	76.4	65.6	86.8	73.2	78.0	62.8
Service	14.9	30.4	16.1	27.9	5.3	21.4	14.6	29.0
Industrial	7.4	9.3	7.5	6.5	7.9	5.4	7.5	8.1
Total	100	100	100	100	100	100	100	100

Source: 1997 survey data.

Females are more likely than males to run commercial-sector businesses, while men dominate the industrial and service sectors. Over 75 percent of females' enterprises were in the commercial sector, compared to only 43 percent for males ( $p < .01$ ). By contrast, men were more heavily represented in the services sector, with 43 percent of male respondents in that sector, compared to just over 17 percent for females ( $p < .01$ ). One possible reason that men are more likely than women to select service sector enterprises is that these are often mobile in nature (e.g. taxi services), and can thus be incompatible with women's child-rearing responsibilities and perceived as unsafe or unsuitable for women. Finally, approximately 13 percent of male respondents ran industrial enterprises, a significantly higher proportion than the two percent for females ( $p < .01$ ).

### **B.3. Enterprise Revenue and Employment**

*Enterprise Monthly Revenue.* Gross revenues from the primary enterprises in the sample averaged approximately S/4,500 (about US\$1,700) over the thirty days prior to the 1997 survey (table 4.9). Treatment group enterprises generated average revenues of around S/4,800, which was higher than the S/3,400 reported for control group enterprises ( $p = .11$ ). Mean revenues for the new entrant group appear higher than those for the control group, though the difference is only marginally significant ( $p = .14$ ), perhaps because the new entrant sample is so small.

Table 4.9. Average Monthly Revenue from Primary Enterprise

	Gross Monthly Revenues (soles)	
	Mean	Median
Treatment Group	4,823 <sup>1</sup>	2,475
Control Group	3,424	1,200
New Entrant Group	6,799 <sup>2</sup>	1,625
Total (n=508)	4,491	1,800

Source: 1997 survey data.

<sup>1</sup> Different from the average for control group at  $p = .11$ .

<sup>2</sup> Different from the average for control group at  $p = .14$ .



The data also provide some idea of how households allocate microenterprise revenue within the household economic portfolio. The manager of each microenterprise was asked to state the most important (primary) and second most important (secondary) use for microenterprise revenue in the month preceding the surveys. This information on the primary and secondary uses of microenterprise income should be interpreted carefully. It indicates what entrepreneurs consider to be the *most important* types of uses for enterprise revenue; it does not imply that revenue is used exclusively for these reported purposes.

Table 4.10. Uses of Microenterprise Revenue

Purpose or Use of Revenue	Primary Use (percent) (n=786)	Secondary Use (percent) (n=782)
Buy Food for Household	46.9	37.2
Reinvest in Same Microenterprise	31.3	27.4
Repay Loans	8.7	9.5
Education-Related Expenses	3.7	8.3
Put into Savings	2.8	5.7
Health Care and Medicine	1.8	4.3
Invest in Another Microenterprise	1.8	2.9
Housing Improvements	1.3	1.9
Other Use or No Answer	1.7	2.8
Total	100	100

Source: 1997 survey data.

The two most frequently cited uses for microenterprise revenue were to buy food for the household and to reinvest in the microenterprise (table 4.10). At a distant third and fourth, the next most frequently cited uses of microenterprise revenue were to repay loans and for education-related expenses. The data clearly indicate that reinvestment in the enterprise is an important use of microenterprise revenues. And there can be no doubt that microenterprises put food on the tables of the respondent households.

Not surprisingly, clients were more likely than non-clients to view loan repayment as an important use of microenterprise revenue. For twenty-eight percent of enterprises in the sample, entrepreneurs reported that loan repayment was the primary or secondary use of revenue. For primary enterprises, the percentage of enterprises for which loan repayment is considered the first or second most important destination for enterprise revenue was even higher, at 32 percent.

*Levels of Employment.* The enterprises in the sample employ relatively few people. Ninety-eight percent of enterprises in the sample had five or fewer workers and an average of 2.2 people were employed in the primary enterprises. This number includes the entrepreneur, members of the household, and paid employees who are not members of the household. The average number of employees in primary enterprises was significantly higher for the treatment group (2.34) than for the control and new entrant groups (both 1.97,  $p < .01$ ).

There were both sectoral and gender differences in levels of employment, but these differences are probably related to each other. As might be expected, the number of employees in industrial

sector enterprises (3.03) is higher than in commercial and service sector enterprises (both at 2.12,  $p < .05$ ). Recall that, in the previous section, it was shown that women are much more likely to run commercial enterprises, while men are more likely to run industrial enterprises. It is no surprise, then, that the average number of employees in men's primary enterprises (2.49) exceeds that for women's primary enterprises (2.00,  $p < .01$ ).

*Structure of Employment.* If we look beyond number of employees to consider the structure of employment, additional differences emerge by participant category, sector, and gender. Employment structure is used here to refer to the type of people employed in the enterprise. An analysis of employment structure in primary enterprises reveals that about one-third of primary enterprises in the sample employed only the entrepreneur (table 4.11). Over half employed the entrepreneur and one or more members of the entrepreneur's household. Only 13 percent of primary enterprises employed non-household members.

Primary enterprises receiving ACP/Mibanco credit were more likely to employ other household members or non-household members than were primary enterprises in the control group. Stated another way, entrepreneurs in the control group were more likely to be working alone. As table 4.11 indicates, 43 percent of primary enterprises in the control group employed only the entrepreneur, as opposed to just 28 percent of treatment group enterprises ( $p < .01$ ). Similarly, treatment group enterprises were more likely than control group enterprises to employ household ( $p < .05$ ) and non-household members ( $p < .10$ ).

Table 4.11. Structure of Employment in Primary Microenterprises (percentage)

Type of Employees	Treatment (n=296)	Control (n=174)	New Entrant (n=38)	Total (n=508)
Entrepreneur Only	28 <sup>1</sup>	43	34	34
Entrepreneur and Household	56 <sup>2</sup>	47	55	53
One or More Non-Household	16 <sup>3</sup>	10	11	13
Total	100	100	100	100

Source: 1997 survey data.

<sup>1</sup> Significantly different from the control group at  $p < .01$ .

<sup>2</sup> Significantly different from the control group at  $p < .05$ .

<sup>3</sup> Significantly different from the control group at  $p < .10$ .

Analysis of employment by sector reveals that, as might be expected, industrial sector enterprises were the most likely to employ non-household members (table 4.12). These enterprises typically pay non-household members to assist with production tasks. However, notice that not even half of industrial sector enterprises employed people from outside the household. In service sector enterprises, where specific skills may be needed, the most common structure is for the entrepreneur to be working alone. Commercial sector enterprises, while often providing work for household members, rarely employ persons other than the entrepreneur and members of his or her household.

Table 4.12. Structure of Employment in Primary Microenterprises, by Sector (percentage)

Type of Employees	Industrial (n=38)	Commercial (n=396)	Service (n=74)	Total (n=508)
Entrepreneur Only <sup>1</sup>	16	33	47	34
Entrepreneur with Household	37	59	30	53
One or More Non-Household	47	8	23	13
Total	100	100	100	100

Source: 1997 survey data.

<sup>1</sup> All differences significant at  $p < .01$  except between commercial and service sectors ( $p < .05$ ).

<sup>2</sup> All differences significant at  $p < .01$  except between industrial and service sectors (not sig.).

<sup>3</sup> All differences significant at  $p < .01$ .

Finally, analysis by gender showed that while the proportion of male and female entrepreneurs employing other household members is similar, male entrepreneurs are more likely than female entrepreneurs to hire non-household members ( $p < .01$ ) (table 4.13). Female entrepreneurs, on the other hand, are more likely to work alone ( $p < .01$ ). Again, this is probably related to the propensity of women to engage in commercial enterprises, with male entrepreneurs more heavily represented in the service and industrial sectors.

Table 4.13. Structure of Employment in Primary Microenterprises, by Gender of Entrepreneur (percentage)

Type of Employees	Males (n=193)	Females (n=315)	Total (n=508)
Entrepreneur Only	26 <sup>1</sup>	38	34
Entrepreneur with Household	51	55	53
One or More Non-Household	24 <sup>1</sup>	7	13
Total	100	100	100

Source: 1997 survey data.

<sup>1</sup> Significantly different from females at  $p < .01$ .

#### **B.4. Enterprise Location**

Business location plays a role in determining market opportunities. Location influences the actual and potential levels of business activity and, to the extent feasible, entrepreneurs seek to locate their businesses wherever customers are most likely to be found. In the context of this study, business location refers to metropolitan Lima's three types of urban zones: the modern, popular, and marginal zones. Because modern zones are more likely to have higher quality infrastructure (roads, transportation, utilities) and higher population densities, they are perceived to have the greatest market potential, followed by popular zones. Marginal zones have the least active markets and the lowest quality of infrastructure to support business activities.

The popular zones of metropolitan Lima are attractive to microentrepreneurs for several reasons. Compared to marginal zones, popular zones have a higher level of market activity, better infrastructure, and lower crime rates. There are more and better-off customers in popular zones than in marginal zones. Compared to modern zones, popular zones have more available space

and lower rents. Many of the municipal governments in popular zones are more receptive to microenterprises than those near the city center. Another important reason for the attractiveness of popular zones over modern zones is that these tend to be closer to the entrepreneur's residence.

In 1997, the majority, or 63 percent, of the enterprises in the sample were located in Lima's popular zones and 18 and 19 percent were located in modern and marginal zones, respectively (table 4.14). While the treatment and control groups were similar in their distribution across zones, the new entrant group was less likely to have primary enterprises located in a modern zone than either the treatment or control group ( $p < .05$ ) and more likely to have them located in a marginal zone than their treatment ( $p = .13$ ) or control group ( $p < .10$ ) counterparts.

Table 4.14. Location of Primary Enterprise (Zone), by Participant Category (percentage)

Participant Category	Treatment Group (n=296)	Control Group (n=174)	New Entrant Group (n=38)	Total (n=508)
Modern Zone	18	20	8 <sup>1</sup>	18
Popular Zone	63	63	61	63
Marginal Zone	19	17	32 <sup>2</sup>	19
Total	100	100	100	100

Source: 1997 survey data.

<sup>1</sup> Significantly different from the treatment group and control group at  $p < .05$ .

<sup>2</sup> Significantly different from the control group at  $p < .10$ .

Analysis by gender showed few location differences between male and female entrepreneurs (table 4.15). Enterprises operated by females, however, were significantly more likely to be located in marginal zones than those run by males ( $p < .10$ ). This is important to note given the perception that enterprises located in such zones face disadvantages that enterprises in modern and popular zones do not.

Table 4.15. Location of Primary Enterprise (Zone), by Gender (percentage)

Zone	Male (n=193)	Female (n=315)	Total (n=508)
Modern	21	17	18
Popular	64	62	63
Marginal	16	22 <sup>1</sup>	19
Total	100	100	100

Source: 1997 survey data.

<sup>1</sup> Significantly different from the percentage for males at  $p < .05$ .

### **B.5. Enterprise Premise**

*Type of premise.* Business premise refers to the physical setting of the business. Some of the important distinctions in types of business premises include 1) whether the business is in a permanent or non-permanent location; 2) whether the business is home-based or located outside of the home; and 3) whether the business is in a formal or informal location. Within the context

of microenterprises in Lima, the survey responses are analyzed in terms of three categories of business premise:

- ◆ *Home-based premise*: inside or adjacent to the home of the entrepreneur;
- ◆ *Formal premise*: inside an established formal market or in a commercial store-front location;
- ◆ *Informal premise*: inside an informal market;<sup>44</sup> on the street or sidewalk, but in the same (fixed) location each day; or having no fixed location, so that the enterprise is mobile throughout the day or from day to day.

The type of premise in which a business is located can have important implications in terms of security, convenience, and profitability. Home-based commercial enterprises, for example, are relatively insulated from crime and are convenient for the entrepreneur (especially those with children at home). However, since they generally cater to neighbors, they may not have a large market potential. Formal premises generally have good security and a high volume of potential customers, but are often expensive to rent or own. Enterprises with informal premises often operate in marginal areas where there is little market potential and where they are vulnerable to crime and municipal crackdowns on unauthorized vending.

Over half of the primary enterprises in the sample are home-based (table 4.16). Of the remaining enterprises, slightly more were in formal premises than in informal premises. An analysis of primary enterprise premise by participation category and gender revealed that there were no significant differences between these groups.

Table 4.16. Type of Premise for Primary Microenterprises, by Sector (percentage)

Type of Enterprise Premise	Industrial (n=38)	Commercial (n=396)	Service (n=74)	Total (n=508)
Home-Based Premise <sup>1</sup>	81	53	37	53
Formal Premise	19	26	31	26
Informal Premise <sup>2</sup>	0	21	32	21
Total	100	100	100	100

Source: 1997 survey data.

<sup>1</sup> All differences significant at  $p < .01$ .

<sup>2</sup> All differences significant at  $p < .01$  except between commercial and service sectors ( $p < .05$ ).

There are several interesting relationships between business premise and enterprise sector (table 4.16). While primary enterprises in all three sectors are about as likely to have a formal premise, they differ significantly on the other two types of premises. First, industrial sector enterprises are predominantly home-based, with around eighty percent of enterprises located in the entrepreneur's home and the rest being in formal premises. The most common type of

<sup>44</sup> An informal market does not have a legally recognized right to the land on which it is located. If any rents or fees are paid by the businesses to the owner or manager of an informal market, they tend to be lower than in a formal market, and there tends to be less physical infrastructure in an informal market than in a formal market.

premise for a commercial enterprise is also the entrepreneur's home, but over one-quarter of commercial enterprises are located in formal premises and one-fifth are in informal premises. Service-sector enterprises are evenly split between the three types of premises, but have the highest incidence of informal premises. Service sector enterprises are the most likely to be mobile, which helps to explain the preponderance of informal premises.

*Premise ownership.* Ownership of the business premise can also be a factor in determining enterprise potential. If the premise is owned, the entrepreneur has more incentive to improve it. For formal premises, especially, ownership generally means that the entrepreneur does not have to spend enterprise revenue on rent. If it is not owned, the enterprise may be vulnerable to eviction or forced relocation.

Table 4.17. Premise Ownership of Primary Enterprise (n=507)

Category	Percent Premise Ownership
Treatment	61 <sup>1</sup>
Control	51
New Entrant	45
Home-based	87 <sup>2</sup>
Formal	33 <sup>2</sup>
Informal	5 <sup>2</sup>
Industrial	74 <sup>3</sup>
Commercial	58 <sup>3</sup>
Service	38
Male	53
Female	58
Total	56

<sup>1</sup> Significantly different from control group ( $p < .05$ ) and new entrant group ( $p < .10$ ).

<sup>2</sup> All differences significant at  $p < .01$ .

<sup>3</sup> Significantly different from service sector at  $p < .01$ .

Treatment group entrepreneurs are more likely to own their enterprise premise than those in the control ( $p < .05$ ) or new entrant ( $p < .10$ ) groups (table 4.17). Not surprisingly, at 87 percent, home-based premises are much more likely to be owned by the entrepreneur than formal or informal ones ( $p < .01$ ). Since industrial sector enterprises are almost always located in the home, it follows that their rate of ownership would be highest. Males and females are equally likely to own their enterprise premises.

## **B.6. Summary of Enterprise Characteristics**

The enterprises in the sample are typical of microenterprises in Lima, Peru. They are small, usually employing the entrepreneur and one other person. Though the primary enterprises in the sample are more heavily weighted toward the commercial sector to reflect the makeup of ACP/Mibanco clientele, the full sample of enterprises is closer to the general sectoral distribution of microenterprises in Lima. The majority of businesses are run by females. Most enterprises

are located in Lima's popular zones, though a disproportionate number of female-headed enterprises are located in less-favorable marginal zones. The bulk of enterprises are based in the entrepreneur's home, leading to a high rate of premise ownership. However, when enterprises are located outside of the home, premise ownership is far less common.

In this section, several enterprise characteristics, namely enterprise sector, gender of the entrepreneur, location (zone) of the enterprise, and type and ownership of enterprise premise have been shown to be related to each other. In addition, several of these enterprise characteristics are related to enterprise employment, which is one of the impact variables. Because of the potential influence of enterprise characteristics on employment and other impact variables, these characteristics are included as moderating variables in the analysis of the enterprise-level impacts. The inclusion of enterprise characteristics as moderating variables in the analysis helps to isolate microcredit impacts on revenue, employment, fixed assets, and transaction relationships.

### **C. Their Credit Histories and Use of Microenterprise Credit**

With some idea about the people in the sample and the characteristics of their enterprises, we turn now to examine their credit histories and use of microcredit within the household economic portfolio. Much of this section focuses on the characteristics of ACP/Mibanco credit use, so the emphasis is on the clients.<sup>45</sup> The section begins with an examination of length and depth of program participation, loan terms, and differences in loan characteristics for different groups.

The second part of the section examines program attrition. The finding that 58 percent of clients ceased to borrow between 1997 and 1999 prompted a comparison of the characteristics of continuing clients to program leavers. The third part of this section looks at credit in the household economy. It begins with an assessment of the magnitude of loans relative to the overall household economy, and then examines client and non-client use of credit from sources other than ACP/Mibanco. This section then closes with a qualitative description of credit use and financial management behaviors within the case study households.

#### **C.1. Program Participation**

##### ***C.1.a. Length of participation***

In 1997, the average length of time that clients in the sample had been borrowing from ACP/Mibanco was 1.3 years. Among the 54 percent who had been clients for more than one year at the time of the first survey, the average time in the program was 1.9 years (table 4.18). For the 46 percent of clients who had been borrowing for less than one year, the average length of time since the first loan was 0.6 years. By August 1999, the average length of borrowing time was 2.5 years for the entire treatment group. These figures are for all clients, including those who were no longer borrowing as of August 1999.

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<sup>45</sup> The credit data were provided by ACP/Mibanco.

Table 4.18. Length of Time in the ACP/Mibanco Program

Category	Years in Program 8/97		Years in Program 8/99 (mean)
	Mean	Median	
Entire Treatment Group	1.3	1.1	2.5
Up to One Year in 8/97	0.6	0.6	1.8
More than One Year in 8/97	1.9	1.8	3.1

Source: 1997 and 1999 ACP/Mibanco credit data

### *C.1.b. Loan size and number of loans*

Loan size can be viewed as a measure of depth of program participation. As clients borrow and repay, building up a credit history with a lender, loan amounts generally increase. In addition, as businesses are strengthened, revenue and repayment capacity increases, enabling clients to take larger loans. Thus, it is not surprising that in 1997, mean loan size for clients who had been borrowing for more than one year, at S/1,875, was significantly larger than the S/1,174 for those that had been clients for up to a year ( $p<.01$ ) (table 4.19). This pattern remained the same over time. Even while loan size increased substantially between 1997 and 1999 for both newer and older clients ( $p<.01$ ), the amount of the last loan taken prior to the 1999 survey was still larger for older clients ( $p<.05$ ) (table 4.19).

Table 4.19. Loan Size and Cumulative Number of Loans

Category	Average Loan Amount 8/97	Average Loan Amount 8/99	Cumulative Number of Loans 8/97	Cumulative Number of Loans 8/99
Entire Treatment Group	1,553 (n=400)	2,046 <sup>1</sup> (n=400)	5.0 (n=267)	7.7 <sup>1</sup> (n=266)
Up to One Year 8/97	1,174 (n=184)	1,797 <sup>1</sup> (n=183)	2.5 (n=144)	6.0 <sup>1</sup> (n=143)
More than One Year 8/97	1,875 <sup>2</sup> (n=216)	2,256 <sup>1, 3</sup> (n=216)	7.8 (n=123)	9.7 <sup>1, 2</sup> (n=123)

Source: 1997 and 1999 ACP/Mibanco credit data.

<sup>1</sup> Significantly different from the 1997 average at  $p<.01$ .

<sup>2</sup> Significantly different than for clients with up to one year of time in program at  $p<.01$ .

<sup>3</sup> Significantly different than for clients with up to one year of time in program at  $p<.05$ .

Depth of participation was also measured in terms of cumulative number of loans taken by clients. This analysis indicated, predictably, that older clients had taken more loans than newer clients and that the cumulative number of loans increased over time. On average, clients had taken five loans prior to the 1997 survey (table 4.19).<sup>46</sup> Clients who had been receiving credit for up to one year averaged 2.5 loans and those with more than one year of borrowing history

<sup>46</sup> Caution should be exercised in interpreting these results since many observations were removed due to obvious flaws, and the remaining data may still contain a substantial number of measurement errors.



averaged nearly eight loans. Many clients continued to take loans after the baseline survey; by 1999, cumulative number of loans had increased for all groups ( $p < .01$ ).

### *C.1.c. Differences in loan size by gender, poverty level, enterprise sector and location*

Gender and poverty level appeared to be related to loan size, but only for newer clients. In 1997, mean loan amount for males with up to one year of borrowing history was S/1,308, significantly higher than the S/1,099 for equivalent females ( $p < .05$ ) (table 4.20). Likewise, poor clients that had been with ACP/Mibanco for up to one year received average loans of only S/906 compared to S/1,268 for new non-poor clients ( $p < .01$ ) (table 4.21). Interestingly, this pattern did not hold up over time. For both gender and poverty level, loan sizes appear to converge over time; for those clients with more than one year of borrowing history, no significant differences in 1997 loan size were detected. This is consistent with the loan size data from the 1999 survey; for those clients who still had loans in August 1999, there were no significant differences in mean loan sizes between groups. This suggests that the poor and women start with smaller loans, but as they borrow and repay loans over time, their loan sizes catch up to those of their non-poor and male counterparts.

Table 4.20. Loan Size in 1997 and 1999, by Gender

Category	Gender	Loan Amount 8/97 (soles)	Percent with Loan 8/99	Of Those with Loans in 8/99: Loan Amount (soles)
Entire Treatment Group	Male	1,677 <sup>1</sup>	36.4	2,988
	Female	1,477	39.5	2,636
Up to One Year 8/97	Male (n=66)	1,308 <sup>2</sup>	30.3	2,707
	Female	1,099	32.5	2,404
More than One Year 8/97	Male (n=85)	1,964	41.2	3,149
	Female	1,818	45.8	2,783

Source: 1997 and 1999 survey data

<sup>1</sup> Significantly different from the average for females at  $p < .10$ .

<sup>2</sup> Significantly different from the average for females at  $p < .05$ .

Table 4.21. Loan Size in 1997 and 1999, by Poverty Level

Category	Poverty Level	Loan Amount 8/97 (soles)	Percent with Loan 8/99	Of Those with Loans in 8/99: Loan Amount (soles)
Entire Treatment Group	Non-Poor	1,630 <sup>1</sup>	40.3	2,950
	Poor (n=112)	1,354	33.3	2,176
Up to One Year 8/97	Non-Poor	1,268 <sup>2</sup>	31.6	2,760
	Poor (n=48)	906	31.9	1,787
More than One Year 8/97	Non-Poor	1,954	48.0 <sup>3</sup>	3,062
	Poor (n=64)	1,689	34.4	2,441

Source: 1997 and 1999 survey data

<sup>1</sup> Significantly different from the average for poor respondents at  $p < .05$ .

<sup>2</sup> Significantly different from the average for poor respondents at  $p < .01$ .

<sup>3</sup> Significantly different from the average for poor respondents at  $p < .05$ .

Loan size tended to vary according to the characteristics of client enterprises as well, with commercial sector enterprises and enterprises in modern and popular zones receiving larger loans. Clients operating commercial sector businesses received loans averaging S/1,621 in 1997, which were larger than the loans of S/1,363 for those with non-commercial businesses ( $p<.05$ ). This difference likely reflects the high level of inventory investment needed for commercial sector enterprises. The zone where the enterprise is located also seemed to have a relationship to loan size. In both 1997 and 1999, mean loan size for clients with businesses located in modern or popular zones was significantly higher than for those whose enterprises were located in the less-developed marginal zones ( $p<.01$ ). This difference between zones could be due to better market conditions in the modern and popular zones which translate into increased capacity to borrow and repay larger sums.

The data on length and depth of program participation indicate that, on average, the clients in the sample increased their levels of participation between 1997 and 1999. These increases were noted for the full client sample both in terms of loan size and cumulative number of loans. Female and poor clients tended to have smaller loans when first entering the program, but gender and poverty differences in loan size faded over time. Enterprises in the commercial sector generally used larger loans, as did enterprises located in modern and popular zones. These increases and differences have implications in terms of the impact assessment because loan size and cumulative number of loans are measures of treatment dosage and can therefore be expected to affect the magnitude of impact.

#### *C.1.d. Loan terms*

In order to understand how clients use ACP/Mibanco loans, it is important to recognize that loan lengths are relatively short and the credit is easily renewable, as long as the borrower maintains a good repayment record. Consequently, it is possible for a client to take five or six loans in a year. The last ACP/Mibanco loans that clients in the sample received prior to the 1997 survey averaged 3.4 months in length. Frequent payments were the norm, with over 80 percent of clients paying loan installments either weekly (30 percent) or once every two weeks (53 percent). The remaining clients (18 percent) made payments on a monthly basis.

In 1997, ACP/Mibanco extended loans using three distinct modalities: group loans, individual loans, and individual loans with a co-signer. The group loan modality accounted for a large proportion of loans, with 46 percent of respondents receiving their last loan prior to the 1997 survey through a group. Individual loans accounted for an additional 30 percent of loans. The least common modality was an individual loan with a co-signer, with only 24 percent of loans disbursed through this means. Predictably, since title to a home was a prerequisite for individual loans, clients with secure housing tenure were more likely to have loans of this type than those with insecure tenure ( $p<.10$ ). There were no differences between gender or poverty groups in terms of modality. Mean loan amount did not differ between the group and individual

modalities, though the mean loan size for individual with co-signer loans was significantly smaller than that for the group and individual loans ( $p < .01$ ).<sup>47</sup>

### *C.1.e. New entrants*

Loan data on new entrants are interesting because they can shed light on what the borrowing habits of the treatment group might have been when they first began to receive loans from ACP/Mibanco. As one might predict, mean amount of the last loan taken prior to the 1999 survey was relatively small for new entrants, only S/1,234 compared to S/2,046 for the treatment group ( $p < .01$ ). However, if we compare the mean value of the last loan taken by clients with less than two years of borrowing experience at the time of the 1997 survey to the mean loan amount for the new entrant group at the time of the 1999 survey, we find that the mean for clients, at S/1,447, is only slightly larger than the S/1,234 for the new entrant group. When time in program is considered, this small difference makes sense because mean borrowing time for these clients was .99 years in 1997, slightly higher than the .78 years for the new entrant group in 1999. These figures show that the credit trajectory of the new entrant group is similar to that for a comparable group of clients in 1997.

Payment frequency differed between the two groups in 1999. The new entrant group tended to make more frequent payments; 29 percent of new entrants made weekly payments compared to 17 percent of the treatment group. A comparison of the mean length of the last loan indicated that it was 4.4 months among clients, compared to 4.0 for the new entrants. The results of these comparisons, although not statistically significant, make sense in light of general microlending practices. Microlenders often start their clients with small loans with frequent repayments. As loans are repaid and the lender accumulates information about the credit worthiness of the client, loan sizes increase and payment frequency decreases.

## *C.2. Program Attrition*

### *C.2.a. Rate of attrition*

Many clients who were actively borrowing from ACP/Mibanco in 1997 were no longer considered clients by the second round of the survey in August 1999. Of the 400 individuals who had an ACP/Mibanco loan at the time of the survey in 1997, only 38 percent had a loan at the time of the second-round survey and were considered to be continuing clients (table 4.22). In addition, 13 clients had finished paying their last loan within 60 days of the 1999 survey but had not yet received a new loan.<sup>48</sup> These individuals were classified as program resters because it is possible that they were taking a short break from borrowing rather than leaving the program. The remaining 58 percent did not have a loan within 60 days of the survey and were thus classified as program leavers.

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<sup>47</sup> Data on modality were not available for the sample in 1999, but ACP/Mibanco had a general client-driven movement away from group loans and toward individual loans between 1997 and 1999.

<sup>48</sup> The use of 60 days as the dividing line between program resters and leavers is based on informal information provided by ACP/Mibanco.

Table 4.22. Program Attrition Between 1997 and 1999

Client Category	Percent (n=400)
Continuing Clients	38
Program Resters	4
Program Leavers	58
Total	100

Source: ACP/Mibanco

### *C.2.b. Results of a probit analysis of program attrition*

In order to gain an understanding of the factors that might influence program attrition, a probit analysis was conducted to explore the relationships between key variables and program attrition. The independent variables included in the model were the 1997 values for the following:

- delinquency status,<sup>49</sup>
- age of respondent,
- gender of respondent,
- marital status,
- annual income from all sources,
- annual income squared,
- sector of the primary enterprise,
- presence or absence of a full-time wage income source,
- ratio of ACP/Mibanco debt to income,
- time in program as of 8/97,

The probit analysis detected several significant relationships between the incidence of program attrition and the independent variables listed above. As might be expected, one of the more important predictors of program attrition appears to be delinquency status. The probit analysis indicates that delinquent clients were significantly more likely to leave the program than non-delinquent ones (table 4.23). At the time of the 1997 survey, 68 clients were classified as delinquent by ACP/Mibanco. By August 1999, 79 percent of these were no longer clients compared to a 56 percent attrition rate for non-delinquent clients ( $p < .01$ ). That such a high percentage of delinquent clients were no longer borrowing from ACP/Mibanco in 1999 is likely a testament to the stringent standards that ACP/Mibanco applies in assessing the continuing creditworthiness of their clients.<sup>50</sup>

<sup>49</sup> Clients are considered delinquent by ACP/Mibanco if the average number of days that they are late on payments over the life of a loan exceeds the number of payments associated with that loan. For example, if a loan is to be paid in four monthly installments and the client is late four days on the first installment, three days on the second, five days on the third, and five days on the fourth, the average number of days late is  $(4+3+5+5)/4$ , or 4.25, and that client is considered delinquent since 4.25 exceeds the number of scheduled payments.

<sup>50</sup> Clients borrow under a permanent loan contract which is established on approval of the first loan. If a client fails to meet all of the terms of his or her loan agreement, the contract is automatically reviewed prior to subsequent loans. Depending on the seriousness of the breach, new loans are delayed or denied altogether (Campion 2000).

Table 4.23. Probit Analysis of Program Attrition (n=372)

	Parameter Estimates
Intercept	-2.06***
Delinquency (delinquent = 0)	.631***
Age (years)	.006
Gender (female = 0)	-.085
Marital Status (unmarried = 0)	.324*
Annual Income (S/10,000)	.394**
Annual Income Squared (S/10,000)	-.056**
Commercial Sector (Commercial = 0)	-.220
Full-time Wage Income (No FT Wage=0)	-.119
Debt-to-Income Ratio	.634**
Time in Program 1997 (years)	.126

\* p<.10; \*\* p<.05; \*\*\* p<.01.

The probit results indicated that income level is related to the incidence of program attrition, with low-income and high-income clients being most likely to cease borrowing. When two household income variables are included in the model (income and income squared), the relationship between income and program attrition is shown to first increase, then decline. This finding indicates that the relationship between income and attrition is not linear. Instead, it appears that clients in the middle- to upper-income range of the sample were more likely to be continuing clients than those with the lowest and highest incomes, with clients reporting around S/35,000 of annual household income being the most likely to be continuing clients (table 4.23).

The size of the ACP/Mibanco loan relative to income, as measured by dividing the amount of the last ACP/Mibanco loan received prior to the 1997 survey by overall household income over the life of the loan, was shown to be statistically related to program attrition. Clients who had loans that were large relative to household income were more likely to be continuing clients than those with lower debt-to-income ratios (table 4.23). Continuing clients had a debt-to-income ratio of 42 percent, which was significantly higher than the 29 percent for program leavers ( $p<.01$ ). Further, the mean 1997 loan size of S/1,731 for continuing clients was significantly higher than the S/1,457 mean for program leavers ( $p<.05$ ). That their loans were larger and their loan size relative to income was greater may indicate that clients who continue to borrow are those who have come to rely more heavily on loans as a component of their financial management practices.

Finally, marital status appears to be related to program attrition. The probit results indicated that married clients were significantly more likely to be continuing clients than unmarried ones (table 4.23). Bivariate analysis supported this finding; only 29 percent of unmarried clients were continuing clients, compared to 42 percent of married clients ( $p<.05$ ). Married and unmarried couples do not differ on variables that are generally thought to be related to repayment capacity such as income, enterprise revenue, and number of income sources, so this difference does not

seem to be income related. One possible explanation may be that married couples support each other in the repayment of loans.

### ***C.2.c. Summary***

In summary, four variables were found to be related to program attrition: delinquency, income level, debt-to-income ratio, and marital status. Delinquent clients, whether forced out or leaving voluntarily, were far more likely to be program leavers than those who kept up with payments. Income levels were a factor, with clients at the lowest and highest income levels being the most likely to stop borrowing. One possible interpretation of this result is that the poorest clients could not keep up with loan payments while the clients with high incomes no longer needed to borrow or began borrowing elsewhere. Debt-to-income ratios were higher for continuing clients, suggesting that for these clients, loans may play a more central role in their financial management practices, allowing them to productively employ larger loans, even though repayment of these loans represents a significant claim on household income. Married clients were less likely to be program leavers, perhaps due to mutual support between spouses in making loan payments.

### **C.3. Credit and the Household Economy**

Interest in the relationship between the size of microcredit loans and the overall household economy has grown both within and without the microfinance industry. Some have asked whether households' level of indebtedness may put too much strain on household resources and hinder economic progress. Others have questioned whether these small loans are large enough to meet the business and other needs of microentrepreneurs, causing entrepreneurs to patch together loans from different sources. If this is the case, it is argued, larger loans or more effective loan products are needed. In the following sections, we attempt to address these questions by examining loan size relative to the household economy and analyzing the respondents' propensity to use credit from sources other than ACP/Mibanco.

#### ***C.2.a. Size of ACP/Mibanco loan relative to household economy***

In order to analyze the size of ACP/Mibanco loans relative to the overall household economy, we quantify the relationship between loan size and three key variables: household income, enterprise revenue, and enterprise fixed assets. For this analysis, loan size refers to loan principal, and does not include any fees or interest charged.

In order to compare ACP/Mibanco loan size to resource flows (income and revenue) and stocks (fixed assets), three ratio variables were created. For income and revenue, the ratios were calculated based on the flows over a time period equivalent to the length of the loan.<sup>51</sup> For

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<sup>51</sup> For income, annual income for each household was divided by twelve and then multiplied by the length of each client's last loan in months. For enterprise gross revenues, the revenues earned by up to three enterprises in each household over the 30 days prior to the survey date were multiplied by the length of clients' last loan in months. For both variables, the amount of the last loan was then divided by the income or revenue that would be earned over a period equivalent to the length of that loan, resulting in a ratio of loan size to income or revenue.

enterprise fixed assets, the amount of the last loan was simply divided by the total value of enterprise fixed assets for the primary enterprise. Values from 1997 were used.

For the whole sample, loans averaged just over one-third of the total household income earned over an equivalent period (table 4.24). The ratio of loan size to gross enterprise revenue was lower, with loan sizes equal to about 20 percent of enterprise revenue generated over an equivalent time period. This means that over the life of a loan, the average household must spend over one-third of its household income or one-fifth of enterprise gross revenues to the repayment of a loan.<sup>52</sup>

Table 4.24. Loan Size Relative to the Household Economy, by Time in Program and Enterprise Sector

	All Clients	Clients Up to One Year 8/97	Clients More than One Year 8/97	Sector		
				Commercial	Service	Industrial
Debt-to-Income	.34 (n=398)	.26 (n=182)	.41 <sup>1</sup> (n=216)	.37 <sup>2</sup> (n=302)	.26 (n=55)	.28 (n=28)
Debt-to-Revenue	.20 (n=393)	.16 (n=180)	.24 <sup>1</sup> (n=213)	.21 (n=301)	.18 (n=55)	.12 (n=28)
Debt-to-Fixed Assets	1.7 (n=381)	1.5 (n=174)	1.9 (n=207)	2.0 <sup>2</sup> (n=299)	.44 (n=54)	.49 (n=28)

Source: 1997 survey data

<sup>1</sup> Significantly different from the average for clients with up to one year of time in program at  $p < .01$ .

<sup>2</sup> Significantly different from the average for service and industrial sector enterprises at  $p < .01$ .

The results indicate that, as the length of time in the program increases, so does the role credit plays in the household economy. Both the debt-to-income and debt-to-revenue ratios are significantly higher for clients that had been borrowing for more than one year than for newer clients (table 4.24). This is probably due both to growth in loan size as clients develop good standing with ACP/Mibanco and to clients' increasing willingness to incorporate loans into financial management practices.

Households with commercial sector primary enterprises have debt-to-income and debt-to-fixed assets ratios that are significantly higher than those that have non-commercial enterprises ( $p < .01$ ). In the previous section, we saw that commercial sector entrepreneurs take larger loans, on average, than those in the industrial and service sectors. It is likely that commercial sector enterprises invest these larger loans in inventory, on which they earn a relatively small profit margin. Commercial sector enterprises also have very high debt-to-fixed asset ratios. On average, loans are twice the value of fixed assets compared to less than half for industrial and service sector enterprises (table 4.24).

<sup>52</sup> Since loan size does not include interest and fees, it underestimates the amount that must be repaid.

That mean loan size was substantially higher than the value of primary enterprise fixed assets for commercial sector enterprises is not surprising. This result is related to two factors. First, the average value of enterprise fixed assets for this sector is significantly lower than for the industrial ( $p<.01$ ) and service ( $p<.05$ ) sectors. This makes sense, given that industrial and service sector enterprises generally require more physical capital, while commercial sector enterprises use fewer, lower-value fixed assets. Second, average loan size for commercial sector enterprises was higher than for industrial sector enterprises and significantly higher than for service sector enterprises ( $p<.01$ ). This finding follows as well, given the large investments in inventory that commercial sector entrepreneurs must make.

Analysis by gender and poverty level show that both females and the poor had comparatively high debt-to-fixed asset ratios and the poor had loans that were very large relative to their income and revenue (table 4.25). The difference by gender is probably due more to the high proportion of females in commercial sector enterprises than gender bias on this variable. Examination by poverty level revealed that poor clients have significantly higher debt-to income and debt-to-revenue ratios than do non-poor clients, meaning that poor clients must dedicate a higher proportion of their incomes to debt repayment than do their non-poor counterparts.

Table 4.25. 1997 Loan Size Relative to the Household Economy, by Poverty Level and Gender

	All Clients	Poverty Level		Gender	
		Poor	Non-Poor	Male	Female
Debt-to-Income	.34 (n=398)	.40 <sup>1</sup> (n=112)	.32 (n=286)	.35 (n=151)	.34 (n=247)
Debt-to-Revenue	.20 (n=393)	.25 <sup>1</sup> (n=110)	.19 (n=283)	.18 (n=148)	.22 (n=245)
Debt-to-Fixed Assets	1.7 (n=381)	2.0 (n=108)	1.6 (n=273)	1.3 (n=143)	1.9 <sup>2</sup> (n=238)

Source: 1997 survey data

<sup>1</sup> Significantly different from the average for non-poor clients at  $p<.10$ .

<sup>2</sup> Significantly different from the average for males at  $p<.10$ .

To put these ratios into perspective, it is useful to look at them in terms of an average household. The average monthly household income, for example, is S/2,058 (US\$776) for the client sample. Since the average length of an ACP/Mibanco loan for the sample is 3.4 months, income earned over this period would be nearly S/7,000. A debt-to-income ratio of .34 would mean that the average household would have to dedicate nearly S/2,400 to pay the loan. If we use a poor household as an example, the proportion of income used for debt payment becomes more striking. Of the S/5,550 the average poor household in the sample would earn over the average loan period, 40 percent, or S/2,220, would go to debt repayment.

Results of this analysis indicate that ACP/Mibanco loans represent a substantial claim on household resources. In terms of flows, it is not difficult to imagine that debt-to-income ratios of over 30 percent could put a strain on the household economy, particularly for poor households. In terms of stocks, that loans average twice the value of enterprise fixed assets for commercial sector enterprises and nearly half of the value for industrial and service sector enterprises has risk



implications. If faced with an income shock, entrepreneurs might be forced to liquidate a large proportion of their productive assets in order to make payments.

### ***C.3.b. Clients' use of credit from alternative sources***

The previous section demonstrated that ACP/Mibanco loans represent a significant claim on clients' household resources. Nevertheless, many in the sample also use credit from alternative sources. For these clients, the ACP/Mibanco loan is but a portion of their total debt at any given time. This section presents a discussion of the incidence of clients' use of credit from sources other than ACP/Mibanco.

It is important to note that changes in the survey instrument between 1997 to 1999 affect the longitudinal comparability of the data collected. In 1997, data were collected on outstanding household debt at the time of the survey from any source and for all purposes. This section of the survey was modified for 1999 to gather data only on microenterprise loans from program and formal lenders. Thus, the data on credit from sources other than ACP/Mibanco are not directly comparable across the two surveys. This lack of longitudinal comparability precludes analysis of changes in non-ACP/Mibanco credit use over time. Nevertheless, the data from both years are useful because they provide information on the prevalence of non-ACP/Mibanco credit in overall household credit use (for 1997) as well as a more specific focus on the use of microenterprise credit from lenders other than ACP/Mibanco (for 1999).

### **General Credit from Alternative Sources (1997)**

The data collected in 1997 show that many clients in the sample have debts other than the loans from ACP/Mibanco. Since data were collected on any outstanding debts that households had (for purposes other than consumer durables and enterprise fixed assets), clients reported having credit from many sources for purposes that could range from a weekly tab at the neighborhood grocery store to a mortgage loan from a bank.

Some sources of credit were more prevalent than others. Supplier credit, presumably for microenterprise inventory or supplies, was the most common type of debt, comprising 50 percent of all reported debts. Loans from family and friends (nine percent), housing improvement lenders (eight percent), banks (eight percent), and retailers (seven percent) were also relatively common. Though rotating savings and credit associations (ROSCAs) comprised only seven percent of reported debts, this figure likely underestimates the use of this mechanism. In another section of the survey, 16 percent of respondents reported use of ROSCAs as a savings tool. Therefore, the true incidence of ROSCA use was probably over 20 percent. Other sources of credit included moneylenders (two percent), vendors associations (two percent), and companies (two percent). Rarely reported sources of credit included NGOs, pawnshops, and government entities.

For analysis purposes, sources of credit were separated into two categories: formal and informal. Formal sources, which included only formal financial entities such as banks, housing improvement lenders, NGOs, and cooperatives, comprised 19 percent of all debts. Informal sources, which made up 80 percent of all debts, included all other sources listed above. These percentages reflect the number of loans, not the size of loans.

Overall, 58 percent of clients reported having at least one debt from a source other than ACP/Mibanco at the time of the 1997 survey. Interestingly, clients who had been borrowing longer were significantly more likely, at 63 percent, to have other debt than were newer clients ( $p<.05$ ) (table 4.26). The average “other” debt was S/1,066 for the client sample, of which approximately S/575 came from informal sources and S/490 from formal sources.

Table 4.26. Credit from Other Sources, 1997

	Clients Up to One Year 8/97	Clients More Than One Year 8/97	All Clients
ALL CLIENTS	(n=184)	(n=216)	(n=400)
Percent with Other Debt	53	63 <sup>1</sup>	58
Number of Other Debts	.76	.88	.82
Mean Other Debt (soles)	1,063	1,069	1,066
Informal	435	691	573
Formal	626	370	488
Ratio of ACP/Mibanco Debt to	.78	.80	.79
CLIENTS WITH OTHER DEBT	(n=98)	(n=135)	(n=233)
Number of Other Debts	1.42	1.41	1.41
Mean Other Debt (soles)	1,995	1,711	1,830
Informal	817	1,105	984
Formal	1,177 <sup>2</sup>	592	838
Ratio of ACP/Mibanco Debt/ to	.59	.69 <sup>3</sup>	.64

Source: 1997 survey data

<sup>1</sup> Significantly different from percentage of clients with up to one year of time in program at  $p<.05$ .

<sup>2</sup> Significantly different from mean formal debt for clients with more than one year of time in program at  $p=.105$ .

<sup>3</sup> Significantly different than for clients with up to one year of time in program at  $p<.01$ .

Among the 233 households that reported “other” debt, average number of debts apart from their ACP/Mibanco loans was 1.4, with 32 percent reporting more than one such debt. Mean debt was S/1,830 (table 4.26). It is interesting to note that while all clients had similar amounts of other debt, newer clients tended to have a higher proportion of debt from formal sources than clients with more ACP/Mibanco borrowing experience. It is likely that as clients take larger ACP/Mibanco loans over time, they curtail borrowing from other formal sources.

Given that the ACP/Mibanco loans, on average, seem large in relation to the household economy, it is somewhat surprising that many households take on additional debt to meet their business and household needs. Since supplier credit makes up such a large proportion of “other” debt, it is clear that clients do not rely solely on ACP/Mibanco loans to finance their microenterprises. Indeed, for clients with “other” debt, the ACP/Mibanco loan comprised only 64 percent of the total debt load (table 4.26). There is evidence, however, that as borrowing time increases, the ACP/Mibanco loan grows in importance; representing a significantly higher proportion of overall debt for older clients (69 percent) than for newer ones (59 percent) ( $p<.01$ ).

## Microenterprise Credit from Alternative Sources (1997-1999)

Since data from 1999 were gathered only on *microenterprise* credit from program and formal sources, there were substantially fewer observations of debt than there were for 1997.<sup>53</sup> Nevertheless, the data provide revealing information about the incidence and magnitude of alternative microenterprise credit use. Data on alternative microenterprise loans were separated into two categories: bank loans and program loans. Bank loans, or loans from regulated financial entities, represented 75 percent of the 53 alternative enterprise loans reported. Program loans, which are loans from NGOs or other similar, non-bank lending entities, made up the remaining 25 percent.

Only 44 of the 305 clients who participated in the 1999 survey reported microenterprise credit from sources other than ACP/Mibanco (14 percent). Since relatively few clients reported alternative microenterprise loans, the mean loan size for the client sample as a whole was a relatively small S/605, with bank loans accounting for S/484 of this sum compared to S/121 from program sources (table 4.27).

Table 4.27. Microenterprise Credit from Alternative Sources, 1999

	Clients Up to One Year 8/97	Clients More Than One Year 8/97	All Clients
ALL CLIENTS	(n=129)	(n=176)	(n=305)
Number of Alternative ME Debts	.17	.18	.17
Mean Sum Alternative ME Debts (soles)	371	777	605
Bank	319	606	484
Program	53	170 <sup>1</sup>	121
Ratio of ACP/Mibanco Credit to Total	.93	.91	.92
CLIENTS WITH ALTERNATIVE	(n=17)	(n=27)	(n=44)
Number of Non-Mibanco Loans	1.3	1.2	1.2
Sum of Non-Mibanco Loans (soles)	2,817	5,062	4,195
Bank	2,417	3,951	3,358
Program	400	1,111 <sup>2</sup>	836
Ratio of ACP/Mibanco Credit to Total	.46	.44	.45

Source: 1999 survey data

<sup>1</sup> Significantly different from mean program debt for clients with up to one year of time in program at p=.12.

<sup>2</sup> Significantly different from mean program debt for clients with up to one year of time in program at p=.13.

Those clients who did borrow from other entities seemed to rely heavily on loans from these sources. Overall, these clients reported an average of 1.2 alternative debts for a mean of S/4,195 (table 4.27). The size of the alternative loans was high relative to ACP/Mibanco loans, with ACP/Mibanco loans representing less than half of overall microenterprise debt.

<sup>53</sup> Data presented here are on the last loan received by the client after the 1997 survey but prior to the 1999 survey.

When taken together, the data from 1997 and 1999 clearly demonstrate that loans from ACP/Mibanco are only part of the overall debts for the client households in the sample. Data from 1997 suggest that supplier credit plays a prominent role in enterprise financial management and that credit from other sources are also commonly used for both enterprise or household purposes. Data from 1999 show that for the minority of clients who borrow from other microenterprise finance organizations, ACP/Mibanco loans account for less than half of the average sum total of loans. Thus, while data from both years do underscore the importance of ACP/Mibanco loans, they also indicate that these are by no means the only debt that client households take on. Households do take on other debt for a variety of purposes, and this debt can represent a large proportion of total debt load.

### *C.3.c. Credit use by non-clients*

The respondents in the non-client sample were screened to ensure that they had not used any form of program or formal microenterprise credit. Much like the client sample, however, non-client entrepreneurs had debt from a variety of sources at the time of the 1997 survey. The most common debt cited for non-clients was supplier credit (51 percent). Friends and family provided 12 percent of the loans reported, and retailers (10 percent), moneylenders (7 percent), and rotating savings and credit associations (6 percent) were also important sources of credit. Credit from banks and housing improvement lenders each comprised only about four percent of observations. As with the client sample, loans from NGOs, pawnshops, and government entities were rarely reported if at all.

Like clients, non-clients reported primarily informal sources of credit (89 percent). Half of their formal loans were from housing improvement lenders, and the remaining loans were from banks or cooperatives. Since the non-clients were screened for formal enterprise credit, it is probable that most or all of these loans from formal sources were used for non-enterprise purposes. For analysis of incidence and amount of debt from “other” sources, the non-client group was separated into the control and new entrant groups. This was done in order to evaluate whether the two groups differed in their use of credit from sources other than ACP/Mibanco.

Table 4.28. Non-Client Credit from Alternative Sources, 1997

	Control Group	New Entrant Group	All Non-Clients
ALL NON-CLIENTS	(n=263)	(n=38)	(n=301)
Number of Debts	0.8	0.7	0.8
Mean Sum of Debts (soles)	668	441	640
Informal	365	313	358
Formal	286	128	265
NON-CLIENTS WITH ALT.	(n=148)	(n=19)	(n=167)
Number of Debts	1.4	1.3	1.4
Mean Sum of Debts (soles)	1,188	881	1,153
Informal	648	626	645
Formal	507	256	479

Source: 1997 survey data

For 1997, credit use by the control and new entrant groups are similar, with no statistically significant differences detected between groups (table 4.28). Results for 1999, however, show that the control group reported significantly higher values on all alternative microenterprise credit variables when means are taken for the full sample (table 4.29). When only those with debt are considered, the control group reported significantly more microenterprise debt from alternative sources than did the new entrant group ( $p < .05$ ).

Table 4.29. Non-Client Microenterprise Credit, 1999

	Control Group	New Entrant Group	All Non-Clients
ALL NON-CLIENTS	(n=175)	(n=38)	(n=213)
Percent with Alternative ME Debt	11	11	11
Number of Debts	.14	.11	.14
Mean Sum of Alternative ME Debts	363 <sup>1</sup>	50	307
Bank	202 <sup>2</sup>	8	167
Program	161 <sup>3</sup>	42	140
NON-CLIENTS WITH ALT. ME	(n=20)	(n=4)	(n=24)
Number of Debts	1.3	1.0	1.2
Mean Sum of Alternative ME Debts	3,173 <sup>2</sup>	475	2,724
Bank	1,765	75	1,483
Program	1,408	400	1,240

Source: 1999 survey data

<sup>1</sup> Different from mean alternative enterprise debt for new entrants at  $p < .01$ .

<sup>2</sup> Different from mean alternative enterprise debt for new entrants at  $p < .05$ .

<sup>3</sup> Different from mean alternative enterprise debt for new entrants at  $p < .10$ .

These results point to two important findings. One, the non-client group (including both the controls and new entrants) had substantial debt outstanding at the time of the 1997 survey. Though the overall level of “other” debt was significantly lower than that for the client group at the time (S/1,066 vs. S/640 at  $p < .05$ ) (tables 4.26 and 4.28), the data clearly show that non-clients do use credit from other sources to meet enterprise and household needs. The second finding is that the new entrant group had significantly lower 1999 levels of microenterprise debt from sources other than ACP/Mibanco than the control group. This difference is likely related to new entrant use of ACP/Mibanco loans. It is possible that once they begin to take loans from ACP/Mibanco, they are less prone to take microenterprise loans from other sources.

It is important to recognize that although some control group households were using credit at the time of the 1997 survey, the credit was not microenterprise credit from program or formal sources. This is a key distinction, because the study focuses on the impact of formal microenterprise credit, specifically from ACP/Mibanco. For this reason, all respondents from the control group who had received ACP/Mibanco credit between 1997 and 1999 were treated as a separate group in the impact analyses. For the 24 non-clients who received microenterprise credit from alternative formal sources between 1997 and 1999, their use of this credit is incorporated into the time in program analysis as an explanatory variable (see section 3, section E.3).

#### *C.4. Use of Credit in Financial Management Strategies*

In the 1990s, numerous credit options became available to microentrepreneurs in Lima. In the past, sources of credit were generally limited to moneylenders, ROSCAs, and family and friends. With the stabilization of the economy, supplier credit for both inventory and fixed assets has become commonplace. Perhaps more importantly, a host of microenterprise lenders provide microentrepreneurs with the option of obtaining formal-sector loans at market interest rates. This expanded range of credit options has resulted in both opportunities and challenges for microentrepreneurs.

While entrepreneurs now have access to new sources of credit, use of these tools entails risk. Prudent and skillful use of available credit options and other financial tools, both formal and informal, can help entrepreneurs improve their businesses through increases in inventory, purchase of fixed assets, and diversification or expansion. Such actions, in turn, can result in payoffs such as increased revenue and income. On the other hand, unwise use of credit or inopportune shocks can lead to negative outcomes. This section will examine how case study entrepreneurs have employed the financial tools available to them and assess the results of their efforts.

##### *C.4.a. Complementary use of multiple sources of credit*

Several of the case study informants employ a complex array of financial tools to implement economic strategies. Prior to becoming a client of ACP/Mibanco, **Martina** (case M) used no credit because the financial needs of the household and her business were met by her husband Mario's salary. When her husband lost his job, and her small, home-based grocery store became the primary income source for the household, she was forced to devise new ways to build inventory and otherwise stimulate her business. She now uses a variety of means, including loans from ACP/Mibanco, *juntas* (ROSCAs), and loans from a cooperative bank, to meet the financial management needs of the household and business.

The *junta* has become an important financial management tool that helps Martina purchase inventory and save for loan payments. For years, Martina and Mario tried to save surplus funds at home, but they would use the money as fast as they would save it. Martina learned about *juntas* from her cousin, and decided to participate. She now pays daily surpluses into *juntas*, often using the proceeds to pay her ACP/Mibanco loans early:

For example, when I receive the *junta*, I use it to pay Mibanco . . . it's a big help when you get a low number. . . . I started to save in that manner to pay Mibanco debts more than anything. When I receive it [the *junta*] I go and pay Mibanco so I won't be thinking: "How am I going to pay them?" Because when one owes, one worries.

If there is money left over, Martina invests in inventory, but the *junta's* primary purpose is to ensure prompt payment of loans.

A cooperative has also become an important component in the household's financial management strategy. Martina joined without her husband's knowledge, saving S/1 a day for a year in order to qualify for a S/900 loan. Through the cooperative, the household is slowly accumulating savings, which is used to leverage loans of increasing size. At the time of the second-round interviews, Martina and Mario were paying off a loan of S/1,200. By the time they finish paying it, they will have enough savings to qualify for a loan of approximately S/1,800, which they will use for home improvements. Martina related that she might someday leave the cooperative and use the accumulated savings to make further housing improvements:

For example, when we have two thousand saved, I can fill out a request saying: "I retire." They give me my money, and with it I can improve my rooms and rent them. With the rent money I can put a roof on the other side [of the house].

Thus, the cooperative serves both as a source of credit and a means of saving for future housing improvements.

ACP/Mibanco loans are used exclusively for Martina's grocery store. The revenue earned is then used to make payments to both the cooperative and the *junta* as well as to cover household expenses. Then, money from both the *junta* and other income sources (rented garage space, Mario's odd jobs, rental rooms) is used to repay ACP/Mibanco while loans from the cooperative are invested in housing improvements. Thus, the ACP/Mibanco loan and the *bodega* seem to be a sort of "central generator," around which the other economic activities of the household revolve. This complementary use of available tools has helped Martina and Mario to build up the business and continue to invest in their house even though Mario does not have a steady job.

The financial management practices that **Laura** (case L) has employed to build up her home-based general store are similarly complex. Though loans from ACP/Mibanco are central to her financial management practices, she also relies heavily on *juntas*. In addition, she has joined a communal bank, loans from which complement the credit from ACP/Mibanco. Laura is keenly aware of the costs and benefits of these formal and informal financial services, and is skilled at combining them in efficient and complementary ways.

Laura started with an ACP/Mibanco loan of only S/400, but through punctual repayment was able to increase her loan size to S/3,000 by the end of her first year of borrowing. Laura uses loans from ACP/Mibanco in a straightforward manner. Though she might, on occasion, invest a portion of a loan in fixed assets, she generally uses the whole loan to purchase inventory. The inventory is sold, generating revenue which is then used to participate in *juntas*.

The *junta* serves as a kind of flexible financial glue, filling the holes that loans cannot. Laura participates in two *juntas*, one weekly and one daily. The daily one, which is small, is used to cover household consumption needs. The weekly one, which is larger and used for the enterprise, can be characterized as a "double" *junta* because it is really two simultaneous *juntas* run by the same person. In contrast to the standard *junta*, in which the order of disbursement is decided through a lottery, the order of distribution in this *junta* is determined by participant needs. When Laura participates, she analyzes what her cash flow needs will be over the period of the *junta*. She then asks for an early number and a late number that coincide with those needs:

. . . [I say], “You know what Señora, I need X number.” . . . we can claim two numbers . . . she gives you a low number; three or four, you know? For example, she does it like this--number two with number ten, three with nine, four with eight . . . it’s like she gives you a part in advance. In the other I keep paying and I’m almost the last, so . . . I always get two numbers . . . I more or less look at the date, you know? . . . If I get number two, I can use it here [in the store] or for whatever . . . and the number ten--I already know what date I will get it. So I don’t worry about it anymore. For example with Mibanco--I know that I’ll get the *junta* on Saturday--I have what I need to pay the bank.

In this way, she can assure herself a low number, which serves as an interest-free loan because she receives the full sum of one *junta* at the beginning of the cycle and continues paying into it until the end. She is free to use that money for investment, consumption, or to make payments on loans. The high number *junta* serves as a simple savings mechanism which she aligns with loan payment dates or other financial needs. Interestingly, if an extraordinary need or opportunity should arise the *junta* manager allows participants to purchase lower numbers at a premium, either from her or from other members. Though Laura has not done this, she views it as a fallback option should she need it.

If Laura does not need to use the *junta* to pay off a loan, she uses it for inventory or to buy fixed assets:

In that case I don’t take [a loan], because if I borrow, I have to pay interest and everything. In contrast, with a *junta* I don’t. . . . It’s like an interest-free loan. . . . When I have some [*junta*] money coming my way, I can buy a display case, a security door . . . ten tanks of [cooking] gas. It goes like that . . . so as not to take them [loans] because you can’t be taking credit from all around. No, it’s uncomfortable. Instead I take the *junta* and buy, buy . . .

For Laura, *juntas* are all-purpose funds which she uses to cover a range of household expenditures and investments, including housing and enterprise improvements, fixed assets, inventory, and loan payments.

As her business has grown and her financial needs have become increasingly complex, Laura has come to depend on this mixed use of loans and *juntas*. While credit flows are important because they help her to purchase necessary inventory, she can get loans only every six or seven months because that is the cycle that her group members prefer, and the terms of loans are dictated by ACP/Mibanco. At the time of the interview in August 1999, for example, Laura was already planning to join a *junta* which would provide her with a large sum prior to the Christmas season. She would not have to do it, she said, if Mibanco had been flexible and offered her a shorter loan cycle which would allow her to take her next loan in November rather than January. In contrast, the flexibility of the *juntas* makes it easy for her to employ them in a complementary role, aligning disbursement dates with payment dates or other times when she needs lump sums of cash.



#### ***C.4.b. Credit use in a larger enterprise***

**Dolores** (case E) and her husband use a mix of large loans, sizable *juntas*, and supplier credit to finance their wholesale/retail businesses. The couple regularly takes loans of up to S/30,000 (US\$8,800) from a formal bank to use as working capital. Dolores participates regularly in two *juntas*, the larger of which is for S/5,250. Many of their distributors extend them supplier credit. Interestingly, they also extend loans to one another.

Dolores and her husband have gradually increased the size of the loans that they receive. They started borrowing from ACP/Mibanco in 1995, eventually receiving loans of up to S/6,500. In 1998, representatives from another bank offered her credit. Though ACP/Mibanco loan sizes had increased significantly over the time that she had been borrowing, they did not meet the couple's credit needs fully. She began to borrow from the other bank as well, taking loans of up to S/24,000. Now they borrow from only one source, a third bank which provides them with loans of S/30,000 against their house. These large loans are normally split between the two businesses and used exclusively to purchase inventory:

I don't know what we bought [with the last loan], but it has always been inventory, you know? Because you can't spend it on your house, or you can't take it and go spend it on furniture or . . . you can't, you know? You have to make that money produce, because they're going to charge interest, too, you know? With what [profit] it generates, then you can buy something.

Dolores uses *juntas* as an all-purpose business fund. She invests S/150 daily in a *junta* which is conducted between seven people. The S/5,250 pot is distributed every five days. If she draws a low number, she often invests the money in inventory from suppliers who provide discounts for cash purchases. If she receives a high number, she might make loan payments. Whether she uses it to invest in merchandise or pay loans, it is always used for business purposes.

Supplier credit is becoming an increasingly important factor in Dolores' enterprise. Nearly all of her main suppliers now offer products on credit, with payment periods ranging from three days to a month. This development has added a new dimension of flexibility to her purchasing practices:

[In the past] they [suppliers] wouldn't sell you anything on credit. The companies were used to working on a cash-only basis. But now there is more flexibility-- companies are offering more credit . . . it helps . . . it helps a little, you know? Because you don't have to give them cash in advance, you know?

Dolores still makes cash purchases when she wishes to take advantage of cash-only sale prices, but supplier credit provides her with new management options.

Dolores and her husband also provide short-term loans to each other. They both have enterprises that require large sums of capital and generate significant revenues. They often find that when opportunities such as cash-only sales present themselves, one or the other of the enterprises has a surplus of cash-on-hand:

. . . sometimes my husband lends us money--we put it together. We both help each other. . . . He [has his money] separate and we [have ours] separate, you know? But sometimes, we put that money together: "You know what? Look, let's buy this, it's a good price." So we look at how much, more or less, we can earn, and we do it . . . in two days, three days, he might have a bill to pay . . . we return the money so he can pay. . . . The benefit is for the businesses . . . if he needs [money] it's the same; if we have it, we lend it to him too.

When such opportunities arise and the financial ebb of one enterprise coincides with the flow of the other, this passing of surplus funds between them allows them to maximize the return on their capital.

#### *C.4.c. On-lending*

While Dolores uses her loans exclusively as working capital, another informant (name withheld) uses his in an unorthodox manner. In order to save money for a significant investment, he on-lent Mibanco loans. When he received loans from Mibanco, he would set aside a portion of the loan and on-lend the rest to a neighbor who has a tarnished credit record and cannot get a loan from formal sources. In an instance that he described, he took a loan of S/5,000, put aside S/1,000 for inventory and on-lent S/4,000 to the neighbor. At 10 percent per month interest accruing on the amount of the original principal, he earned S/2,000 over the five-month period of the loan:

The loan before this last one I saved as well . . . I didn't spend a thing. On the contrary, I got [the loan] and lent [it] to a neighbor at 10 percent interest . . . I earned [money]! I lent 4,000; kept 1,000 for inventory. From that she gave me 6,000. I earned 2,000.

Since he repaid his ACP/Mibanco loan with revenues from his business while putting aside the payments from his neighbor, he ended up with a substantial lump sum at the end of the period. After several cycles of on-lending, he was able to accumulate enough funds for the investment he had been considering.

#### *C.4.d. Loss of credit eligibility*

**Pepa** (case C) no longer borrows from Mibanco because her ex-husband took a loan without her knowledge and did not repay it. She has tried to access credit from other sources, but her house is in her husband's name, and she cannot use it as collateral. Although she is no longer an ACP/Mibanco client, her case is illustrative because it shows the value of readily accessible working capital.

When Pepa was receiving loans, she related, she would use them primarily to invest in high-margin clothing for sale. She saw the loans as a separate capital for her mobile clothing business, and used them for her home-based school supplies shop only when a holiday or other such peak sales period was approaching: "It was like having another capital for another business.

Only a few times I invested in inventory for the shop, and I only did that when I knew that I would sell more in the shop.” Credit helped Pepa to invest in clothing, which while requiring larger investments, provided higher returns.

Now that she does not receive credit, Pepa has turned to other means of capitalizing her businesses. When her businesses were doing well and she had access to credit, she did not participate in *juntas*. Now that she needs working capital but does not have access to formal sources of credit, she has turned to the *junta* as a means of financing her enterprises.

When asked about the *juntas*, she smiled slyly and said “I put together *juntas*.” She explained that when she needs capital, she visits her friends and neighbors and tells them that she is putting together a *junta* of S/200. Every week, each of nine participants other than herself will contribute S/20. As the administrator of the *junta*, she has the right to the first payment. She then invests the money in inventory for the week. At the beginning of the following week she is obliged to pass S/200 to the person to whom the week corresponds. That same day, however, she collects the next round of contributions (S/180), which she immediately invests in inventory. This process repeats itself until the *junta* is done, then she starts over again. This behavior has earned her the moniker “*loca junta*” (crazy *junta* lady):

I do *juntas*. I organize them. I have ten people and the *junta* is for 200 soles. I get the first *junta*. With the fund I receive I work. . . . [I have] a week to work the money. Then I’m putting together those 200 soles in parts, 20 here, 20 there, on a weekly basis. . . . I see it as a loan. . . . Because it is a capital that I have to employ productively as fast as I can. I run with that capital . . . and look for a means to invest it. I look at what I am selling, and invest in whatever is selling well. If I purchase something that will sit on the shelf for two weeks, the capital dies. But if I see something that I can sell tomorrow . . . I try to do it that way.

By organizing the *junta*, Pepa guarantees herself the equivalent of an interest-free loan of S/180 over the ten-week *junta* cycle. Though it is not much money, the *junta* serves a disciplinary purpose. Pepa feels that the pressure of having to constantly turn over this capital is helpful, because it forces her to make a fast profit on her investments and ensures her at least S/180 of capital from week to week.

Another method Pepa employs to raise capital is a layaway plan on high-value items. She collects payments over time, often selling the same item to several people. As she collects payments, she uses that money to purchase fast-moving inventory for her store. By the time customers finish paying for their goods, she has invested their money several times over. She raises additional capital through cosmetics sales. A cosmetics company provides her with an average of S/500 worth of cosmetics on a monthly basis. She does not have to pay the company for the products until the following month. Thus, as she sells cosmetics, she uses the money she receives to invest in other activities. Pepa stated: “I invest in things that people have already requested, or items which I know will sell. In this manner I play with that money, I invest it. When the last day to pay comes, I go and pay, and receive new products.”

Thus, in essence, the *junta*, layaway sales, and the sale of cosmetics are substitutes for the loans that she used to receive from Mibanco. Through the *junta*, she ensures that she will have at least S/180 (S/200 less her S/20 contribution) of working capital to invest on a weekly basis. Layaway and cosmetics sales add a further several hundred *soles* to the pot.

These means of raising capital are imperfect substitutes for working capital loans, however, because the transaction costs associated with them are high. Whereas Pepa used to take ACP/Mibanco loans of S/1,000 and make biweekly payments over a period of four months, she must now juggle three time-consuming, complicated activities to generate the capital she needs. Instead of making a single, biweekly trip to Mibanco, she must now invest time and effort in knocking on ten doors every seven days in order to collect the *junta* money, keep track of layaway sales, and worry about converting cosmetics into cash, then into inventory, and back to cash as quickly as possible. That she does all of these things in order to raise the meager amount of money that she works with is a testament to the value of readily available working capital on reasonable terms.

This examination of the financial management behavior of the case study participants reveals much about how they use the various formal and informal financial tools at their disposal to meet their distinct objectives. Household and business needs and objectives are not static, but rather shift constantly in response to fluctuating internal and external forces. To meet the challenges and opportunities that arise over time, household financial strategies must be flexible.

Many believe that credit is simply used to purchase more inventory which when sold increases revenue and yields sufficient funds for both profit taking and loan payments. The reality is much more complex, and microcredit, though it is an important tool, is only one of several that entrepreneurs use to further their business and household goals. All of the case study participants, as commercial sector entrepreneurs, share a need for working capital, but they often need more than is available from ACP/Mibanco or need lump sums of cash at intervals which do not coincide with loan cycles. To meet these needs, they turn to *juntas* and supplier credit, or even to other sources of credit such as formal banks and cooperatives. By mixing and matching all of the financial tools available to them, these entrepreneurs take advantage of opportunities that would be out of reach if they were to rely on microcredit alone.

## **D. Conclusion**

In many respects, the sample households are typical of entrepreneurial households in Lima. The households have around five members comprised of two parents, two minor children, and an adult child or other blood relative. Typically, at least three household members work in some capacity, either in the family microenterprise or as a wage-earning employee elsewhere. Earnings from microenterprises provide the bulk of income for sample households. The majority of households in the sample are not considered poor, either by national or international standards. Though a significant minority are considered poor, very few can be categorized as extremely poor.

The enterprises in sample are also typical; they have low revenues, and the few people that they employ are nearly always the entrepreneur and household members. They are predominantly

commercial in nature, most often operated by women, and located mainly in the bustling popular zones of Lima. The majority are home-based businesses, leading to a high rate of premise ownership.

Many respondents use credit to meet both household and enterprise needs. For the clients in the sample, ACP/Mibanco loans are large in relation to overall household resources. Nevertheless, they use substantial amounts of credit from other sources, presumably to complement ACP/Mibanco loans. The case study results support this finding; informants indicated that they use a range of formal and informal financial tools to meet their short- and long-term household and enterprise goals.

Though the respondents, their households, and their enterprises are typical in many ways and have common characteristics, we must not forget that the individuals, enterprises, and households are all unique. It is a heterogeneous sample; each household and its members have their own backgrounds, abilities, and motivations. The purpose of this study is to try to discover whether or not, in the face of all this diversity, the use of microcredit has an impact on the clients, their households, and their enterprises. In this section, we have provided some descriptive information on the survey respondents and the case study households. We turn now to the second part of this report, in which we present the findings of the impact analysis.



## **INTRODUCTION TO PART TWO: SECTIONS 5, 6, AND 7**

We turn now from the descriptive information in part one to the impact results in part two. Sections five, six, and seven report on the impact results at the enterprise, household, and individual levels, respectively. Recall from the previous discussion that there are three comparison groups in the study: 1) the control group, who never received ACP/Mibanco credit, 2) the treatment group, who received one or more loans prior to the 1997 survey, and 3) the new entrant group, who received a first ACP/Mibanco loan between the two rounds of the survey.

The sections are organized in the order of the impact hypotheses, with the discussion for each hypothesis following the same format. First, any background information that might be needed to understand the measurement of the outcome variable is provided. Second, the changes that have occurred in the outcome variable between 1997 and 1999 are presented. These changes are indicated for the sample as a whole, as well as for each of the three comparison groups. Average values for the outcome variables are reported in a table, and the results of paired t-tests and gain score analysis are provided. These test results indicate the statistical significance of any absolute and relative changes that have occurred in the outcome variables over the two years. While this information is important as a context for the impact results, it should not be interpreted as indicating the impact of microcredit.

The impact results are drawn from ANCOVA estimations comparing the treatment group to the control group and comparing the new entrant group to the control group. In the ANCOVA procedure, the level of the outcome variable in 1999 is statistically explained in terms of the comparison group, the level of the outcome variable in 1997, and a set of moderating variables. The estimated coefficient on the comparison group variable provides the statistical evidence related to the impact of microcredit. Along with the evidence related to impact, the ANCOVA results also provide statistical information on the relationships between the moderating variables and the outcome variable. These results are interpreted alongside the impact results, but it should be emphasized that they indicate the relationships between the moderating variables and the outcome variable independently of the impact of microcredit. The statistical results for the ANCOVA estimations are summarized in tables in appendix 4.

In addition to the statistical results—changes in the outcome variables, the estimated impact of microcredit, and the estimated relationships between the moderating variables and the outcome variable—the discussion for many of the hypotheses includes additional evidence from the case studies. Since a variety of results are presented for each hypothesis, the reader is encouraged to keep in mind that the results used to test for impact are those coming from the ANCOVA estimations. It should be recalled that the case studies are not representative of the survey sample, but are included as a means of illustrating and clarifying the statistical results. Finally, it is worth repeating that the impact results should be interpreted with caution. For a detailed discussion of the statistical procedures used in the impact analysis and the limitations of these procedures, the reader is referred to the information provided in section three (sections E and F).





## Section 5 – Impacts of Microcredit on Microenterprises

Improvement in the performance of microenterprises is both an objective of the households who own these enterprises and a national policy objective. There are many factors that can affect enterprise performance. Among these is microcredit, which, under the right circumstances, is believed to have a positive impact on enterprise performance. In this section, we examine five outcome variables related to enterprise performance:

- enterprise revenue,
- enterprise fixed assets,
- employment of household and non-household members,
- transaction relationships, and
- formalization of the enterprise.

The direction of impacts, whether positive or negative, must be interpreted within the economic environment in which they occur.<sup>54</sup> In general, the results indicate that the period between 1997 and 1999 was a difficult one for the microenterprises in Lima, as reflected in few significantly positive changes in the outcome variables over time. Instead, the levels of most of the outcome variables either remained stagnant or fell over the two years. Against this backdrop, there is some evidence that microcredit helped to protect client enterprises from some of the negative pressures around them.

For each of these outcome variables, we begin by describing how the variable was measured. Next we discuss the changes that have occurred in the outcome variable between 1997 and 1999 for the treatment, control, and new entrant groups. This is followed by the presentation of the results from the ANCOVA analysis. These results include both an estimate of the impact of microcredit as well as estimates of the effects of independent moderating variables on the outcome variable. The treatment group and the new entrant group are discussed separately in this section, because there were interesting differences in these results. These differences in the results suggest that there may be differences between the long-term and short-term impacts of microcredit. In addition, for two of the outcome variables--transaction relationships and enterprise formalization--information from the case studies is provided to illustrate how the changes and impacts occur.

### A. Enterprise Revenue

Microenterprise revenue is an important indicator of enterprise performance, since it represents both the enterprise earnings available to the household and the contribution to national

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<sup>54</sup> For example, a positive impact can be detected in five different situations: 1) the impact variable may improve for the treatment group, but drop for the control group; 2) the impact variable may improve for both the treatment and control groups, but the improvement for the treatment group is greater; 3) the impact variable may improve for the treatment group, but remain unchanged for the control group; 4) the impact variable may remain unchanged for the treatment group, but drop for the control group; or 5) the impact variable may drop for both groups, but the drop for the treatment group is less.

productivity. As the case studies indicate, it is common practice for the clients to use the ACP/Mibanco loans to purchase more inventory at lower prices and to increase the volume of sales. This higher volume of sales should translate into higher revenue and profits.

The survey results indicate that microenterprise revenue remained relatively stagnant between 1997 and 1999. However, there was evidence that participation in the microcredit program may have had a significant positive impact on enterprise revenue. The results for enterprise revenue should be treated with caution, since they are sensitive to the way that outliers in the data were handled.

### **A.1. Measuring Enterprise Revenue**

In this study, enterprise revenue was measured in three ways:

- combined annual net revenue (profits) for all microenterprises associated with the household;
- combined monthly gross revenue for up to three enterprises associated with the household; and
- monthly gross revenue for the primary enterprise.

Gross revenue and net revenue, while related to each other, represent different types of measurements (see box). All three are used in this study as proxies for microenterprise profit. Of the three measures used, net revenue comes closest to the actual concept of profit, because it is intended to measure revenue minus costs. Combined annual net revenue is measured in the survey as the self-reported profits derived from all of the household's enterprises over the twelve months prior to the survey.

#### ENTERPRISE REVENUE AS A PROXY FOR PROFITS

Gross revenue represents the total receipts of the enterprise. Net revenue, or profits, is the gross receipts less all costs, including depreciation. Since costs can be time-consuming to measure, gross revenue is sometimes used as a proxy for profits. A recent empirical study of 448 microenterprises in Zimbabwe compared the performance of different proxy measures for profit and found that gross revenue, while consistently overestimating the absolute value of profit, was a reasonable proxy for measuring the profits of different enterprises relative to each other (Daniels 1999).

### **A.2. Changes in Revenue**

The averages for the three measures of revenue are reported in table 5.1. There were no statistically significant increases in revenue between 1997 and 1999. The one exception was a marginally significant increase in the net annual revenue from all enterprises for the new entrant group ( $p=.12$ ). Overall, the evidence suggests that enterprise revenue was relatively stagnant between 1997 and 1999.

Table 5.1. Average Enterprise Revenue (1997 and 1999)

	Net Annual Revenue from All Enterprises (S/1,000)		Gross Monthly Revenue for up to 3 Enterprises (S/1,000)		Gross Monthly Revenue for Primary Enterprise (S/1,000)	
	1997	1999	1997	1999	1997	1999
Total Sample	11.73	11.74	3.94	4.01	3.01	3.00
Treatment Group	13.43	13.58	4.72	4.72	3.64	3.43
Control Group	9.28	8.70	2.55	2.85	2.10	2.28
New Entrant Group	9.81	11.46 <sup>1</sup>	4.28	3.87	2.65	3.25

Note: Outliers more than three z-scores from the mean were removed from the sample.

<sup>1</sup> Significantly different from the 1997 average at  $p=.123$ .

### **A.3. Impacts on the Treatment Group**

The results of the ANCOVA analysis indicate that microcredit may have helped entrepreneurs to earn higher net revenue (profits). Microcredit appears to have had a positive impact on the treatment group's gross revenue, as well. As table E-1 (in the appendix) indicates, the treatment group was significantly better off than the control group in terms of annual net revenue ( $p<.01$ ) and in terms of gross monthly revenue from up to three enterprises ( $p<.05$ ).

We can interpret the ANCOVA results as indicating that, for treatment and control group households that had similar levels of revenue and the same number of enterprises in 1997, the impact of microcredit was to increase the combined net revenue from microenterprises by as much as S/3,427, or slightly more than US\$1,000.<sup>55</sup> This implies that microcredit may have had a positive impact on microenterprise profits and that treatment group households had an additional US\$1,000 annually to allocate to production, consumption, and investment activities within the household economic portfolio.

The ANCOVA results also indicate that there may have been a positive impact of microcredit on gross revenue (receipts) from up to three enterprises. Again referring to table E-1, the monthly gross revenue in 1999 for up to three enterprises associated with the household was estimated to be S/1,028 higher for the treatment group than for the control group. While this is slightly more than US\$300 per month, it should be kept in mind that this is a measure of receipts only, and the actual profit impact would be substantially smaller.

#### MICROCREDIT IMPACTS ON ENTERPRISE REVENUE

A 1999 cross-sectional study of FINCA/Peru clients in Lima found that clients who had been in the FINCA program for between 28 and 40 months had gross and net primary enterprise revenue that was significantly higher than that reported by clients who had been in the program for less than four months (Pait 1999).

<sup>55</sup> Recall that the exchange rate at the time of the 1997 survey was S/2.65 = US\$1. At the time of the 1999 survey, the exchange rate was S/3.40 = US\$1.

If we look only at the primary<sup>56</sup> enterprise, the evidence for microcredit impacts is not as strong. Table E-1 presents the ANCOVA results with outliers removed, which is consistent with the way the statistical results are presented throughout the study. However, this is one of the few outcome variables for which the removal of outliers affects the impact results. With outliers removed, there is no statistical evidence that microcredit has an impact on gross monthly revenue earned by the primary enterprise. When the 17 outlying values of enterprise gross revenue are kept in the data set, there is some evidence of a positive impact of microcredit. Given the same starting level of gross revenue in 1997, and similar levels on all of the moderating variables, a primary enterprise in the treatment group was estimated to earn S/1,656 more per month in 1999 than a primary enterprise in the control group.<sup>57</sup>

Gender of the entrepreneur was significantly related to enterprise revenue ( $p < .01$ ). Primary enterprises run by men had monthly gross revenue in 1999 that was estimated to be S/644 higher than those run by women, even after factoring out the influences of the other moderating variables (sector, location, type of premise, premise ownership, proximity to the paved road, and 1997 revenue). A possible explanation for this gender gap in revenue is the fact that men are more often involved in wholesaling, where gross revenue is normally higher. Another possible explanation, but one that could not be verified empirically, is that men are more likely to undertake high risk/high payoff enterprises.

#### **A.4. Impacts on the New Entrant Group**

The new entrant group, representing new clients, also may have experienced positive impacts on enterprise revenue from their participation in the microcredit program (table E-1). As with the treatment group, new clients experienced positive impacts on microenterprise profits at the household level. That is, the ANCOVA analysis indicated a statistically significant impact of microcredit on the combined net revenue from all enterprises associated with the household. The magnitude of this impact was estimated to be S/2,521 ( $p < .10$ ). In other words, new entrant households that resembled the control households in terms of levels of enterprise revenue and number of enterprises in 1997 were estimated to have received about US\$740 more in combined microenterprise profits in the twelve months prior to the 1999 survey.

With the outliers removed, there is no evidence of microcredit impact on the gross revenue of the new entrant households. On the other hand, when outliers are kept in the data, the ANCOVA analysis indicates that there are positive impacts on both gross revenue for the primary enterprise

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<sup>56</sup> Recall that the primary enterprise is the one for which the credit was received or, for the control group, the enterprise that was identified as similar to the client's primary enterprise during the construction of the sample frame.

<sup>57</sup> When the outliers are not removed from the data, the average 1997 monthly gross revenue for the combined treatment and control groups was S/4,637. A primary enterprise in the treatment group that started with this level of revenue in 1997 was estimated to have a slight drop in revenue to S/4,523 in 1999, while a primary enterprise starting with the same 1997 revenue in the control group would have a much larger drop to S/2,867.

and gross revenue for up to three enterprises.<sup>58</sup> These findings must be interpreted with caution, both because they are internally inconsistent and because of the small sample size for the new entrant group

#### **A.5. Summary**

Participation in the microcredit program appears to have had some positive impacts on microenterprise revenue. These positive impacts were experienced by both the treatment and new entrant groups during a period when microenterprise revenue was generally stagnant. There was evidence that microcredit may have led to some US\$1,000 more in combined annual microenterprise profits for households in the treatment group and some US\$740 more for households in the new entrant group. In addition, the gross revenue for up to three enterprises associated with the household was also significantly higher for treatment group households.

The implication of these findings is that both old and new borrowers may be exploiting the fungibility of microcredit to increase combined profits from all enterprises associated with their household economic portfolios. Given the information provided by the case study households, the likely path by which these impacts occur is by increasing enterprise working capital, so that entrepreneurs can buy more inventory, take advantage of lower input prices, and increase sales. The results indicate that higher revenue from sales translated into higher profits and greater income for the household. This finding is consistent with the finding of positive impacts on total household income discussed in the next section.

### **B. Enterprise Fixed Assets**

Investments in enterprise fixed assets can increase the scale and productivity of the enterprise. Higher levels of enterprise fixed assets are associated with enterprise growth and greater profit potential. The survey results provide some evidence that the entrepreneurs in the sample were accumulating enterprise fixed assets over the period between 1997 and 1999. The impact analysis also indicates that microcredit may have had positive impacts on the accumulation of fixed assets within primary enterprises.

#### **B.1. Measuring Enterprise Fixed Assets**

There were two measures of enterprise fixed assets used in this study. Both measures were based on the current monetary value of assets, or estimated resale value, as reported by the respondent. The measures of the value of enterprise fixed assets were conducted at two levels: 1) for the primary enterprise only and 2) for the combined set of all enterprises associated with the household. As usual, we focus our discussion on the findings after removal of sample outliers, since the sample means and statistical tests were distorted by a relatively small number of outliers.

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<sup>58</sup> With outliers kept in, combined monthly gross revenue for up to three enterprises was estimated to be S/2,375 higher in 1999 for households in the new entrant group over households in the control group, given that they started with the same level of revenue and the same number of microenterprises in 1997 ( $p < .05$ ). The primary enterprise of a new entrant was estimated to have S/2,774 more in gross revenue in 1999 than an enterprise of a non-client that had similar characteristics in 1997 ( $p < .05$ ).

## **B.2. Changes in Fixed Assets**

There were small increases in the value of enterprise fixed assets over the 1997 to 1999 period, but in most cases these increases were not statistically significant (table 5.2). When all of the enterprises associated with the household are considered, there is a clear trend toward fixed asset accumulation. For the sample as a whole, there was an increase of about S/1,000 (or US\$340) over the two-year period ( $p < .05$ ).

All of the comparison groups had similar size increases of about S/1,000, but none were highly significant.<sup>59</sup> When only the primary enterprise is considered, none of the changes between 1997 and 1999 were highly significant. Again, however, there were marginally significant results ( $p = .14$ ), providing some indication of an increase in the value of assets for the treatment group (table 5.2).

Table 5.2. Average Values of Enterprise Fixed Assets (1997 and 1999)

	Value of Enterprise Fixed Assets in Primary Enterprise (S/1,000)		Value of Enterprise Fixed Assets for All Enterprises (S/1,000)	
	1997	1999	1997	1999
Total Sample	3.48	4.01 <sup>1</sup>	5.18	6.17 <sup>2</sup>
Treatment Group	3.97	4.76 <sup>3</sup>	6.56	7.48 <sup>1</sup>
Control Group	2.92	2.90	3.41	4.51 <sup>1</sup>
New Entrant Group	2.65	3.91	2.70	3.74

Note: Outliers more than three z-scores from the mean were removed from the sample.

<sup>1</sup> Marginally significant difference from the 1997 average at  $p = .16$ .

<sup>2</sup> Significantly different from the 1997 average at  $p < .05$ .

<sup>3</sup> Marginally significant difference from the 1997 average at  $p = .14$ .

## **B.3. Impacts on the Treatment Group**

There is statistical evidence that participation in the microcredit program may have had a positive impact on the value of fixed assets in the primary enterprise ( $p < .05$ ). These results from the ANCOVA analysis are reported in table E-2. For two primary enterprises starting with the same level of fixed assets in 1997, and similar levels on all of the moderating variables, the enterprise receiving credit from ACP/Mibanco was estimated to have added S/1,700 more in fixed assets by 1999 than the enterprise that did not receive credit. This is equivalent to an increase in the value of enterprise fixed assets of US\$500.

The results for the moderating variables also indicate that asset accumulation in the primary enterprise is related to the sector of the enterprise: commercial and service sector enterprises accumulated less in fixed assets than industrial enterprises by S/3,792 and S/1,311, respectively,

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<sup>59</sup> The changes for the treatment and control groups were both marginally significant at  $p = .16$ .

over the two-year period ( $p < .05$ ). The ANCOVA results also indicated that primary enterprises adjacent to a paved road accumulated significantly more in fixed assets than those not adjacent to a paved road ( $p < .10$ ).

When the value of all enterprise fixed assets associated with the household are combined, there is no measurable impact of microcredit.<sup>60</sup> However, it is interesting to note that there is a negative relationship between the number of enterprises in a household and the increase in enterprise fixed assets over the period ( $p < .10$ ). Households with two enterprises had about S/1,160 less in total enterprise fixed assets than households with only one enterprise, indicating that households that focus their resources on a single enterprise tend to make higher total investments in enterprises over time. As might be expected, income also played a role: households with higher levels of income in 1997 also accumulated more enterprise fixed assets between 1997 and 1999 ( $p < .05$ ). This was probably because they were able to invest more of their enterprise profits back into the enterprise instead of using them to meet consumption-related expenses.

#### **B.4. Impacts on the New Entrant Group**

For new clients of ACP/Mibanco, there was no measurable impact on enterprise fixed assets. This is consistent with the hypothesis that impacts on enterprise fixed assets would occur after long-term participation in the program rather than immediately. While the ANCOVA estimates comparing the new entrant and control groups did not indicate any microcredit impacts, there were some statistically significant relationships between the moderating variables and asset accumulation. The results for the primary enterprise indicated that asset accumulation in the commercial and service sectors was lower than in the industrial sector ( $p < .01$ ). This is similar to the findings for the comparison of the treatment and control groups. There is also a relationship between type of premise and fixed assets as, holding the other variables constant, those with a formal premise accumulated an estimated S/2,364 more in enterprise fixed assets than those with a home-based enterprise ( $p < .10$ ).

#### **B.5. Summary**

The entrepreneurs in the sample appear to have been slowly accumulating enterprise fixed assets between 1997 and 1999. When information on all of the enterprises associated with the household are combined, there was a general increase in the value of enterprise fixed assets of about S/1,000 (US\$340). This provides some indication that the enterprises in the sample were expanding in value over the study period.

The impact analysis revealed that participation in the microcredit program may have had a positive impact on assets in the primary enterprise, leading to the accumulation of US\$500 more in assets for the treatment group than for the control group. There was no statistical evidence that microcredit had an impact on asset accumulation for the combined enterprises associated with the household.

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<sup>60</sup> As the time in program analysis reported in chapter VIII will show, however, there is a positive statistical relationship between the value of all enterprise fixed assets and the number of years as a borrower.



There was no evidence that microcredit had an impact on the microenterprises of the new entrants. These households had entered the ACP/Mibanco program less than two years before the 1999 survey. It is likely that asset accumulation occurs slowly over time, so that not enough time had passed for the impact on fixed assets to become measurable.

Finally, several of the moderating variables were found to be related to the accumulation of enterprise fixed assets. Most notably, the accumulation of enterprise fixed assets was more rapid in the industrial sector than in the commercial or service sectors. This is understandable, since industrial-sector enterprises have higher capital equipment needs than commercial and service enterprises. It is also interesting to note that households with fewer enterprises appear to accumulate more total enterprise fixed assets over time.

## **C. Enterprise Employment**

The ability of microenterprises to provide self-employment for the entrepreneur, productive work for members of the entrepreneur's household, and paid employment to non-household members is relevant to macroeconomic policy in Peru, where microenterprises employ a significant proportion of the labor force. Among the enterprises in this study, there were steady or declining levels of overall employment between 1997 and 1999. During this same period, however, there was an increase in the level of non-household employment and in the value of wages. The statistical results indicate that the use of microcredit may have had a positive impact on overall employment as well as on the employment of non-household members.

### **C.1. Measuring Enterprise Employment**

Microenterprise employment was measured in a number of ways, including different measures of the amount of time worked and measures of wages.<sup>61</sup> Add to this the distinction between the primary enterprise and other enterprises, and between the employment of household members and the employment of non-household members, and there are numerous employment measures that can be analyzed in the survey data. In order to simplify the discussion, a total of five employment variables are reported in this section:

For the primary enterprise

- days worked per month, by all workers (including the owner/operator)
- days worked per month, by non-household members only
- wages paid per month (in soles)

For up to three enterprises

- days worked per month, by all workers (including the owner/operator)
- days worked per month, by non-household members only

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<sup>61</sup> Because the two measures of time—hours per week and days per month—provided almost identical results, only days per month are reported here.



Recall from the discussion of enterprise employment in section four (section B.3) that a relatively small number of non-household workers were employed by the microenterprises in the sample. In fact, only 12 percent of all workers in microenterprises were not members of the entrepreneur's household in 1997 (189 of 1554 total workers). Similarly, in 1999 only 13 percent of all workers were non-household members (185 of 1401 total workers). However, these non-household workers receive the majority of wages paid by microenterprises. This is because it is uncommon for an entrepreneur to assign a wage to him/herself or to members of his/her household. Within the sample, wages were paid to only six percent of household members (entrepreneurs and other household members) working in the enterprise.

The data used in the analysis excludes outliers more than three standard deviations from the mean.<sup>62</sup> The primary motivation for removing the outliers was that they distorted the mean values of the employment variables. However, the results of the impact analyses were similar whether the outliers were included or removed. Since the outliers are all high numbers and the majority of the outliers were removed from the treatment group, the results reported here may understate the magnitude of impacts on the treatment group.

## C.2. Changes in Employment

Changes in the mean values of the five employment variables are given in table 5.3. As can be seen in the table, the only statistically significant changes occurred in the primary enterprises. The average amount of time that all workers (including the owner/operator) were employed in primary enterprises declined for the sample as a whole, from 54 to 50 days per month. At the same time, however, employment time for non-household workers increased, both for the sample as a whole and for the treatment group. These results indicate a trend toward increasing reliance on non-household employees, especially among the enterprises that receive microcredit.

Table 5.3. Average Values of Enterprise Employment (1997 and 1999)

	Total Sample		Treatment Group		Control Group		New Entrants	
	1997	1999	1997	1999	1997	1999	1997	1999
FOR PRIMARY ENTERPRISE								
Days/month, all workers	54.3	50.2 <sup>1</sup>	56.9	53.6 <sup>3</sup>	50.8	45.6 <sup>1</sup>	52.2	46.8
Days/month, non-HH mbrs	3.08	4.37 <sup>2</sup>	4.06	5.67 <sup>3</sup>	1.69	2.10	2.26	5.32
Wages/month (soles)	50.2	73.7 <sup>2</sup>	63.1	84.9	34.8	54.9	28.7	80.4
FOR UP TO THREE ENTERPRISES								
Days/month, all workers	71.9	69.2	76.5	74.2	64.8	60.5	69.8	70.7
Days/month, non-HH mbrs	5.47	5.98	6.68	7.45	4.16	3.57	2.00	5.57

<sup>62</sup> The outliers were removed from the data for all workers because of the tendency of some entrepreneurs to overstate the amount of time that they actually work.

Note: Outliers more than three z-scores from the mean were removed from the sample.

<sup>1</sup> Significantly different from the 1997 average at  $p < .01$ .

<sup>2</sup> Significantly different from the 1997 average at  $p < .05$ .

<sup>3</sup> Significantly different from the 1997 average at  $p < .10$ .

The total value of wages paid increased between 1997 and 1999. This upward trend was only statistically significant for the sample as a whole, although it was consistent for all subgroups.<sup>63</sup> The 47 percent increase in reported monthly wages is primarily due to the increases in the amount of time worked by non-household members. It may also reflect increased productivity among microenterprise workers and/or changes in the labor market leading to higher wages for workers in the microenterprise sector. In summary, the changes between 1997 and 1999 indicate that the employment of non-household members was becoming increasingly important relative to overall employment and that, subsequently, the total wage bill was also increasing.

### *C.3. Impacts on the Treatment Group*

The results of the ANCOVA analysis provide consistent indications that the use of microcredit may have had positive impacts on microenterprise employment (table E-3). In all four of the employment variables measuring the amount of time employed, there were positive treatment effects. For one of these measures, total employment in primary enterprises, there was evidence that the use of microcredit served to cushion employment declines. Among enterprises with similar levels on the moderating variables, employment in those enterprises receiving microcredit dropped by an estimated 4.5 days per month less than in those enterprises without microcredit.

When considering only non-household workers in the primary enterprise, the treatment and control groups actually moved in opposite directions over time. Among enterprises starting with the same levels of employment and similar levels of the moderating variables in 1997, those enterprises receiving microcredit were estimated to increase their employment of non-household members, while those not receiving microcredit reduced this employment. The magnitude of the this divergence between the treatment and control groups was estimated to be 2.5 days per month.

The results also indicated a possible positive impact of microcredit on the levels of employment in the combined enterprises of the household. For this aggregate variable, levels of employment held steady for the enterprises of households receiving microcredit, while they dropped for the control group enterprises. The estimated differences between enterprises starting at similar levels of employment and the other moderating variables in 1997 were nine days per month for total employment and over three days per month for non-household members.

The estimated impact of microcredit on wages paid was positive, but only marginally significant ( $p = .134$ ). This means that the ANCOVA results provide only limited indication of a positive

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<sup>63</sup> All of the changes in wages paid per month were at least marginally significant:  $p = .165$  for the treatment group;  $p = .148$  for the control group; and  $p = .186$  for the new entrant group. Note that the new entrant group started in 1997 paying less in wages than the control group, but was paying more than the control group in 1999.

impact on wages. The results suggest that primary enterprises receiving microcredit pay an average of S/30 more per month in wages.

Several of the moderating variables were found to be related to employment levels. As might be anticipated, enterprises in the industrial sector employed non-household workers about five days more per month and paid S/147 more in monthly wages than commercial sector enterprises. Men's enterprises also employed non-household workers for more days and paid more in monthly wages than women's enterprises. Finally, enterprises in formal premises were associated with higher levels of employment for non-household workers and higher wages paid. These findings are consistent with the discussion of employment structure in section four.

#### **C.4. Impacts on the New Entrant Group**

In comparing the new entrant group to the control group, the impact results for only one of the five employment variables indicated a statistically significant impact of microcredit. There was evidence that the use of microcredit may have had a positive impact on the employment of non-household members in primary enterprises. The ANCOVA results indicated that new entrant group primary enterprises employed non-household workers at a rate that was 3.1 days per month higher than for control group primary enterprises ( $p < .10$ ). In conjunction with the findings for the treatment group, this implies that microcredit can have both immediate and long-term impact on the employment of non-household members. New entrant enterprises in the industrial sector had higher levels of employment than enterprises in the commercial and service sectors, which was similar to the findings for the comparison of the treatment and control groups.

#### **C.5. Summary**

The impact analysis provides some indication that enterprises receiving microcredit were able to maintain higher levels of employment, employ more non-household members, and pay more in wages than non-client microenterprises. Against the background of a decline in overall employment in primary enterprises between 1997 and 1999, there was a significant increase in the employment of non-household members among those enterprises receiving ACP/Mibanco credit. For all five of the measures used, there was some indication that microcredit may have a positive impact on employment.

It is difficult to say why client households were turning more to the use of hired labor in their microenterprises. One possible explanation is that entrepreneurs and their family members may have been choosing to work less. However, a separate analysis of the data revealed that there were no significant changes between 1997 and 1999 in the number of hours per week worked by each worker. Instead, it appears that microcredit may be allowing entrepreneurs to maintain and increase the scale of their operations to a greater extent than for non-clients, thus requiring more workers than are available in the household.

When up to three of the enterprises associated with the household economic portfolio are considered, the ANCOVA results indicate that the enterprises associated with client households provide a little over nine (9.07) additional days of employment per month for all workers and 3.26 additional days of employment per month for non-household workers. If we extrapolate

these estimates to the approximately 40,000 clients that ACP/Mibanco had at the end of 1999, these differences translate into the equivalent of about 17,414 full-time jobs per year, of which 6,259 are paid positions for non-household members.<sup>64</sup> That translates into one full-time job for every 2.3 loans outstanding.

## **D. Transaction Relationships**

The use of microcredit was hypothesized to change not only the levels at which entrepreneurs do business, but also the transaction relationships, or ways that entrepreneurs do business. An attempt was made in this study to measure several types of transaction relationships. However, changes in the nature of transactions in input and output markets are more difficult to measure and interpret than changes in revenue, fixed assets, and employment.

The analysis of the survey data revealed that microcredit may have had the impact of increasing the rate of business premise ownership. In addition, a focused analysis of the survey data for commercial sector enterprises indicated that microcredit may have had positive impacts leading to commercial enterprises' use of more advantageous types of input suppliers. The entrepreneurs participating in the case studies provided evidence to confirm this finding by describing numerous specific examples of ways that microcredit had allowed them to improve their transaction relationships in the purchase of inputs.

### **D.1. Measuring Transaction Relationships**

In the 1997 and 1999 surveys, five types of transaction relationships were measured:<sup>65</sup>

- type of supplier (retailers; wholesalers and producers);
- type of customer (retailers; wholesalers and producers),
- type of business premise (home-based; formal; informal),
- ownership of the business premise (not owned; owned), and
- the use of sales contracts (no; yes).

Type of supplier refers to the source of inputs purchased for the enterprise. Depending on the type and size of the business, entrepreneurs may purchase inputs from a retail or wholesale source, or even directly from producers. Businesses with little working capital often must purchase inputs at a higher price from retail establishments. Businesses with more working capital can buy wholesale, often at deep discounts. In the context of this study, a movement toward purchasing from wholesalers or producers is considered positive, because it implies that entrepreneurs are able to secure their inputs at more favorable prices, thus leading to higher profits.

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<sup>64</sup> The calculation is based on the assumption that 250 days per year is a full-time job.

<sup>65</sup> In 1997, the marketing margins for the top three products in commercial sector enterprises were also measured. However, since these questions were relatively time consuming and difficult for the respondents, they were dropped from the 1999 survey.

Type of customer and the use of fixed sales contracts both relate to sales volume. Since retailers sell a few items at a time to the general public, sales volumes may stay relatively low. Through wholesale sales to retailers, on the other hand, an enterprise can usually sell larger volumes of goods, earning higher total revenue. Thus, a shift from retail to wholesale sales is considered a positive change. Fixed sales contracts are also considered favorable to the enterprise, because it indicates long-term relationships with customers and the guarantee of a level of sales that is less variable over time.

The last two variables measure the type and ownership of the business premise. There are three types of premise considered in the study: home-based, formal, and informal. Each type implies different advantages and disadvantages. Home-based enterprises are generally more secure and convenient, but have limited market potential. Formal premises, though they can be less secure and more expensive, generally have greater market potential because they are located along thoroughfares or in bustling markets. Informal premises are considered the least favorable type of premise. Often unauthorized and located in marginal areas, businesses in such premises struggle with crime and low customer volume. Whether or not the premise is owned also has implications for security and profitability. If the premise is owned, the entrepreneur pays no rent and does not have to worry about eviction or forced relocation. In addition, ownership is believed to provide an incentive for premise improvement.

#### **D.2. Changes in Transaction Relationships**

Only two of the transaction relationship variables measured in the survey changed significantly between 1997 and 1999 (table 5.4). There was a decline in the number of entrepreneurs selling their products primarily to other businesses (rather than the final consumer). There was also an increase in the number of entrepreneurs who own their business premise. These changes occurred within the treatment group, and were translated into significant changes for the sample as a whole. There were no changes in the other three transaction variables: 1) most of the enterprises in the sample (86 percent) bought their supplies from wholesalers or manufacturers; 2) about 29 percent were in a formal premise (rather than in the home or in an informal premise), and 3) only 18 percent of enterprises made any sales on fixed contracts or standing agreements.

Table 5.4. Transaction Relationship Variables for Primary Enterprises (1997 and 1999)

	Total Sample		Treatment Group		Control Group		New Entrant Group	
	1997	1999	1997	1999	1997	1999	1997	1999
Suppliers (percentage buying from wholesalers or manufacturers)	87	86	87	87	84	84	94	81
Customers (percentage selling to other businesses rather than the general public)	9	6 <sup>1</sup>	11	5 <sup>2</sup>	7	7	9	3
Premise (percentage located in a commercial location or formal market)	27	29	26	30	26	26	32	42
Ownership (percentage of business premises that are owned)	56	60 <sup>3</sup>	62	67 <sup>3</sup>	51	52	41	44
Sale Contracts (percentage selling on fixed sales contracts or agreements)	17	18	21	21	11	14	16	19

<sup>1</sup> Significantly different from the 1997 average at  $p < .05$ .  
<sup>2</sup> Significantly different from the 1997 average at  $p < .01$ .

<sup>3</sup> Significantly different from the 1997 average at  $p < .10$ .

### **D.3. Impacts on the Treatment Group**

The ANCOVA results indicated that a possible impact of microcredit was to increase the incidence of ownership of the business premise among entrepreneurs in the treatment group (table E-4). For enterprises with similar levels of the moderating variables in 1997, an entrepreneur in the treatment group was about nine percent more likely than an entrepreneur in the control group to have gained ownership of his or her business premise between 1997 and 1999 ( $p < .05$ ). Not surprisingly, among the moderating variables, type of premise was also significantly related to premise ownership. Home-based premises were more likely to be owned by the respondent than informal premises and formal premises, by 18 and 36 percent, respectively ( $p < .01$ ). The combination of a preponderance of home-based enterprises and a high rate of homeownership resulted in the highest level of premise ownership for these entrepreneurs.

For the sample as a whole, there was no evidence that the use of microcredit had a significant impact on the other transaction variables. However, an analysis that included only the commercial sector enterprises revealed that microcredit may have had an impact on commercial enterprises of improving their sources of input supplies (table E-4). This is very consistent with the idea that microcredit can be used by commercial entrepreneurs to buy inventory in bulk at more favorable prices. Information from the case study interviews supports this view (see below).

Many of the relationships between the transaction outcome variables and the moderating variables were predictable. For example, enterprises in the commercial and service sectors were significantly less likely than enterprises in the industrial sector to sell to other businesses and to

have fixed sales contracts. The only gender-related difference was that men's enterprises were more likely to have fixed sales contracts than women's enterprises.

#### **D.4. Impacts on the New Entrant Group**

Analysis of the survey data did not detect any impacts of ACP/Mibanco credit on the transaction relationship variables. There were, however, a few significant relationships between the transaction variables and the moderating variables. As with the analysis of the treatment group, type of premise was related to premise ownership: home-based premises were more likely to be owned than formal and informal premises away from the home. Both sector and premise ownership were related to the use of fixed sales contracts. Enterprises in the industrial sector were more likely to use fixed sales contracts than enterprises in the commercial and service sectors. Finally, entrepreneurs who owned their business premise were somewhat less likely to use fixed sales contracts than those who did not.

#### **D.5. Transaction Relationships and Credit**

With the increasing liberalization of Peru's economy over the past decade, the transaction relationships between entrepreneurs, their customers, and their suppliers have changed significantly. In the eighties, economic conditions had a profound impact on the way that entrepreneurs managed their businesses. High inflation often precluded the use of credit, and many suppliers even demanded payment in advance for goods provided. Staple goods were scarce, and government price controls dictated the cost of many products. These conditions constrained market forces, greatly reducing the market options available to entrepreneurs.

With the stabilization of the economy and the opening of markets to a new universe of imported goods, the market options open to microentrepreneurs have expanded greatly. This new environment has presented both challenges and opportunities for the case study respondents. A number of suppliers and distributors now compete for their business, offering a comparatively endless range of products, often on credit and even delivered. As working capital credit from formal sector sources has become available to even the smallest of businesses, respondents have taken it, often from more than one source. This credit has further expanded their options, freeing them from dependence on supplier credit and allowing them to take advantage of the discounts that come with cash purchases. The following section explores the purchasing strategies of case study informants, and the role that microcredit plays in facilitating these strategies.

##### **D.5.a. Expanded options for purchasing inputs**

**Pepa's** (case C) story illustrates some of the positive changes that entrepreneurs can make when they use credit to expand their input purchasing options. Before she began to receive loans, Pepa generally purchased merchandise through her husband (who ran a small wholesale/retail gift shop) or from itinerant vendors. Both of these sources were unreliable, particularly the street vendors. Soon after receiving her first loan, she began to buy from reputable wholesalers rather than street vendors:



I have only been buying from wholesalers since I received my first loan. Before, I just looked for low prices without placing much importance on product guarantees or even my own security. They [the street vendors] wouldn't let me return faulty merchandise, and twice I was robbed buying from them. Buying under those conditions was uncomfortable. . . . Now, I buy in the [formal] stores and have more security; if I make a purchase in a store I can leave my package there while I look for more products in nearby stores.

No longer obliged by circumstances to seek the purchasing option that required the least amount of working capital, Pepa used loans to purchase higher quality goods and to increase her own security. Though she no longer borrows from ACP/Mibanco, the relationships that she established with wholesalers while she was using loans have allowed her to continue buying from them.

**Raymundo** (case H) no longer receives loans due to credit problems with ACP/Mibanco. As a result, he has not been able to maintain the same transaction relationships with wholesalers that he had while he was receiving loans. When he had a reliable source of credit, he would purchase his supplies for his clothing shop from both a wholesale market and producers in La Victoria, a district known for its small clothing manufacturers. He would split his purchases between these sources because each offered distinct advantages. At the wholesale market, though he had to pay cash, Raymundo was able to buy clothes of higher quality and select the styles and sizes that he felt he could sell quickly. The producers, on the other hand, while they provide clothing on credit, sell a lower-quality product and do not allow him the flexibility to choose particular sizes or styles:

The difference between buying from the producers and [the market] . . . they have their advantages and disadvantages. The advantage of buying from the producers is that they provide clothes on credit for a long time. In two or three months you pay a certain amount. Now, to go to the wholesale market, you go with maybe a thousand [*soles*], you buy. The advantage is that you can choose all of the models and sizes that you want. There you don't have to buy by the dozen; you can choose one, or two, or three from here and there--the models that you want. That's the advantage. . . .[clothes] from the wholesale market sell faster. . . . Better quality--they use good materials in the wholesale market. In contrast, the producer clothes don't last long, that's why they're cheap.

Now that he does not have access to loans, Raymundo is forced to rely almost exclusively on the producers because they offer him supplier credit. He can no longer stock his store with the styles and sizes that he feels would move more quickly, which constricts his ability to compete with other clothing sellers.

**Dolores** (case E) also mixes supplier credit and loans in order to stock her wholesale/retail processed meat business. As with Raymundo, loans have helped her to take advantage of the benefits that cash purchases can confer. Many of her suppliers offer goods on credit, with repayment periods ranging from three days to a month. This is an advantage in that she does not



have to pay up-front, but she does have to pay a higher price in many cases. If there is a sale, however, she must pay in cash in order to secure the discount:

See, Mibanco might give me S/5,000 . . . suppose I'm offered cheese, and I buy 1,000 kilos. The cheese costs me S/6 a kilo and I buy 1,000 kilos, that's S/6,000. So I add S/1,000 and buy the cheese, and sell it for S/8 a kilo . . . I earn S/2,000 in a week . . . if you buy using cash, the seller gives it to you because you buy it and he goes back for more. . . . Take ham, for example. The price of ham is S/17.80 and it goes on sale for S/16.20. If you buy 1,000 hams . . . you're saving S/1,600 . . . it's like that money falls from the sky, you know? . . . with the loan, we've been able to buy in quantity, sell, and repay.

It is this practice, which is often facilitated by credit, that provides Dolores with her highest profit levels.

Prior to becoming a client of ACP/Mibanco, **Laura** (case K) purchased a large proportion of products for her home-based general store from distributors. Though she could still have nearly everything delivered by distributors, now that she is receiving loans she chooses to wait until she has a substantial amount of cash so she can go to the wholesale market. There she can purchase a wider variety of products at better prices than what the distributors can offer:

Even though the first credit was small, in any case I stopped working with distributors. Generally I buy using cash. . . . I go myself and buy for less. The distributors deliver here, but they always raise the price. . . . But if you buy cash, you go [to market] and look for the best prices yourself.

Now that loans allow her to buy goods in larger quantities, she has also begun to purchase some products directly from producers who give her better prices or free products. She could purchase the same products on credit from distributors if she wished, but she prefers to make purchases directly from the factory and pay cash:

Before, for example, I would buy sodas [with supplier credit], now I don't. I buy them using cash. . . . Of course, it's cheaper. That is to say, Coca-Cola brings us [product] from the factory; before we bought from distributors. For example . . . Kola Real delivers--right now they have a buy two get one free deal . . . they give you three and they charge you for two. The distributors don't do that, they charge you for all three and keep the difference. . . . [You can contract] with the factory because you have capital and you can buy [the product]. If I didn't have capital, I'd have to use [supplier] credit.

Loans have also helped Laura purchase larger quantities of inventory:

Before . . . I would buy only what was important: "well, this will sell and this won't," . . . Now I have more [capital] to work with. For example, before I would buy four or five of an item . . . a dozen packs of cookies. Now I buy by the box. You earn a bit more. Also, if you buy [only] a dozen, in two or three days you

have to go back again. . . . [With loans you can buy] other things that take longer to move, but which leave you with more profit.

When she was receiving smaller loans, she would buy small quantities of the products that she absolutely needed. Now that she is receiving larger loans, she buys in larger quantities, obtaining better prices and saving on transportation expenses and time by making fewer trips to the market.

#### *D.5.b. Credit ceilings as a constraint*

Now that **Jacinta** (case J) and **Beto** have a new stall in a bustling new market, their business has taken off and they are selling wholesale/retail. They are selling a much higher volume of goods, and perceive that they need larger loans than what ACP/Mibanco will lend them. In their old location they sold goods at retail prices and quantities. Using a mix of Mibanco and supplier credit, they were able to turn a profit. Now that they are selling wholesale/retail, the small (up to S/7,500) loans they receive from ACP/Mibanco are insufficient to purchase needed inventory, forcing them to rely primarily on supplier credit. When they receive inventory on credit, however, they must pay a premium that reduces profits. They would prefer to take larger loans:

*Beto:* . . . because when there is more money, the merchandise turns over more quickly. One earns more and is more able to meet loan payments. [We could work with] some S/30,000. . . .

*Jacinta:* There's a lot of action there [in our new stall]. There one sells retail and wholesale. People come . . . they buy by the sack, by the package . . .

*Beto:* The [new] business is better than [the old one] here. Here there was business, but people would buy a kilo, a half-kilo, like that. There it's more--one sells wholesale--and to sell wholesale, one needs capital. . . . [With supplier credit] a package of noodles costs S/22 or S/22.50, payable in 15 days, 25 days, sometimes thirty days. [If we pay up front] it's less--at least S/21.50.

*Jacinta:* That's why we need cash!

Jacinta and Beto explained that if they had sufficient capital, they would be able to secure better prices. In the meantime, the lack of capital is hurting their bottom line. At the time of the second interviews they were appealing to ACP/Mibanco for larger loans as well as exploring other options such as formal banks, committed to finding a source of capital that would enable them to take advantage of the opportunities for discounts that cash purchases bring.

Credit has clearly impacted the case study informants' purchasing practices. On one level, they can simply use the lump sum of a loan to buy more product at lower prices. This allows them to increase their profit margin, lower their prices to increase competitiveness, or a combination of both. At another level, credit expands their range of purchasing options, giving them the flexibility to choose between using supplier credit or making a cash purchase, or buying from producers or wholesalers rather than higher-priced distributors. Credit provides them with an additional option that adds to their ability to select the alternative that is most favorable given their current needs. In both cases, credit translates into choices for the case study entrepreneurs--choices which can lead to higher profits and greater enterprise stability.

#### **D.6. Summary**

The most important impacts of microcredit on transaction relationships were to increase the incidence of premise ownership and to provide entrepreneurs with the flexibility to buy inputs in more advantageous ways. The impact of microcredit in increasing ownership of the business premise was revealed in the analysis of the survey data comparing enterprises in the treatment and control groups. Evidence of the positive impact of microcredit on input supply relationships was found in the statistical analysis of the commercial sector enterprises and in the case study interviews, where the respondents consistently related that microcredit permitted them to buy in bulk for lower prices, to take advantage of special sale prices on inputs, and to choose from a wider range of input sources.

### **E. Formalization of the Microenterprise Sector**

Since the early 1990s, even as the informal sector has expanded, both national and local authorities have taken steps meant to bring informal enterprises into the formal sector. At the national level, these efforts have included reform and simplification of the tax system and relaxation of labor laws, accompanied by increased pressure to conform to these rules. At the local level, municipalities have increasingly enforced laws that restrict street vending and have increased their efforts to ensure that businesses are properly licensed.

Pressures to formalize have affected entrepreneurs in several ways. Those who are willing and able to undertake the range of tasks associated with formalization receive the benefits that formal status confers. Formalization can be considered an asset in that entrepreneurs no longer must expend time and energy evading the authorities. In addition, formal status allows entrepreneurs to be eligible for credit from a broader range of financial service providers, particularly banks. On the other hand, formalization means paying taxes and fees, which reduce profits. For those who are unwilling or simply unable to navigate the complex web of regulations and restrictions, staying informal has become increasingly difficult. Though such entrepreneurs save money by avoiding taxes, they must spend time, energy, and money (in the form of bribes) to avoid being detected, fined, relocated, or even shut down.

This section combines information from the survey and case study interviews to examine the topic of microenterprise formalization. From the survey data, it appears that microcredit may have had a positive impact on licensing with the municipality, but there is no evidence that microcredit had an impact on tax registration. The case study data indicate that entrepreneurs are under pressure to formalize: all of the entrepreneurs in the case studies report that they have been affected by government efforts to bring informal enterprises into the system. Despite these pressures, the survey results indicate that there have been few changes in the overall levels of formalization between 1997 and 1999.

#### **E.1. Measuring Formalization**

Two variables were used to measure levels of formalization. The first measure indicates whether or not the enterprise holds a current business license from the municipality. The second measure indicates whether or not the enterprise is registered with the national tax authority (SUNAT). In

the context of this study, an increase in the incidence of formalization is considered a positive outcome.

### **E.2. Changes in Formalization**

Between 1997 and 1999, the percentage of enterprises that were licensed by the municipality and registered with the national tax authority held steady (table 5.5). Municipal licenses were somewhat more common than tax registration in 1999: about 60 percent of enterprises in the full sample had licenses, while only 54 percent were registered to pay business taxes. The treatment group had the highest level of formalization, followed by the control group. The new entrant group had the lowest level of formalization.

Table 5.5. Enterprise Formalization in Primary Enterprises (1997 and 1999)

	Licensed with Municipality (percentage)		Registered with Tax Authority (percentage)	
	1997	1999	1997	1999
Total Sample	60	60	57	54
Treatment Group	65	65	62	58
Control Group	55	54	52	52
New Entrant Group	47	53	41	38

It is surprising that no changes were detected over the two years, especially since there were increasing pressures over the period to register with the national tax authority. If anything, there appear to be small reductions in the percentage of enterprises registered with SUNAT. The reduction for the treatment group was marginally significant ( $p=.128$ ). Possible explanations for the lack of significant increases in registration with SUNAT are that the increased record keeping burden and the negative cost implications of compliance outweighed the cost of evading the tax authorities.

### **E.3. Impacts on the Treatment Group**

The use of ACP/Mibanco credit appears to have had a small but positive impact on the incidence of licensing with the municipality (table E-5). The direction of this impact was to maintain or slightly increase the level of licensing among treatment group enterprises during a period when there was a slight decline among control group enterprises. Among enterprises with similar characteristics on the moderating variables, there was estimated to be a four percent increase in licensing of treatment group enterprises between 1997 and 1999, while there was a nine percent decline in licensing for control group enterprises ( $p<.10$ ).

Several of the moderating variables were significantly related to licensing. As expected, factors associated with the visibility of the business were important. Home-based enterprises, many of which depend on visibility to potential customers, were more likely to be licensed than enterprises in informal premises ( $p<.05$ ). In addition, enterprises in popular and marginal zones were less likely to be licensed than enterprises in the modern zones ( $p<.05$ ). Commercial sector

enterprises were more likely to be licensed than industrial enterprises, which were generally not visible from the street ( $p < .10$ ). Gender was also related to licensing: among enterprises with similar levels on the other moderating variables and similar credit status, those run by men were more likely to be licensed than those run by women ( $p < .01$ ). Finally, enterprises in premises owned by the entrepreneur were also more likely to be licensed than enterprises in premises that were not owned by the entrepreneur ( $p < .05$ ).

There was no statistical evidence that microcredit had an impact on the incidence of tax registration. As with municipal licenses, the visibility of the enterprise was related to tax registration. Enterprises in the popular and marginal zones were less likely to be registered than enterprises in the modern zone ( $p < .10$ ), and enterprises in premises away from entrepreneurs' homes were less likely to be registered than home-based enterprises ( $p < .05$ ). Again, the enterprises of men were more likely to be formalized: among enterprises with similar characteristics, those belonging to men were more likely to be registered to pay taxes than those belonging to women ( $p < .05$ ).

#### **E.4. Impacts on the New Entrant Group**

The results of the ANCOVA analysis comparing the new entrant group to the control group did not provide any indication of a significant impact of microcredit on formalization. Many of the same relationships between formalization and the moderating variables were found in the analysis of the new entrant and control groups as were previously found in the analysis of the treatment and control groups. For one thing, there was a gender gap in licensing among this group: men were more likely to obtain a municipal license for their enterprises than were women ( $p < .10$ ). As with the comparison of the treatment and control groups, enterprises in formal premises were less likely to be registered to pay taxes than home-based enterprises ( $p < .05$ ). This is an unexpected finding, but points to the high visibility of home-based enterprises in the sample. The most important predictor of being licensed and registered to pay taxes in 1999 was being licensed and registered in 1997 ( $p < .01$ ). Those entrepreneurs who had completed the steps required for formalization in the past were the most likely to have completed them again in 1999.

#### **E.5. Formalization: Mounting Pressure to Enter the System**

The government's push for widespread formalization has touched all of the case study participants. In some cases, informants have become formalized only to a degree. Others have become integrated into the system without trouble. Still others have had their lives disrupted by the pressures to enter the system.

##### **E.5.a. Partial entry**

For households that have entered the formal economy only partially, enterprise type and location seem to be factors in determining whether an individual enterprise is licensed and registered. **Dora's** (case G) household, for example, has two businesses: a clothing stall and a mobile tea stand. The clothing stand, which is stationary and located in a formal market, is both licensed by the municipality and registered with SUNAT. On the other hand, the tea stand, which is mobile, is neither licensed nor registered.

**Pepa's** (case C), **Pablo's** (case D), **Efraín's** (case F), **Ana's** (case A), **Laura's** (case K), and **Martina's** (case M) households all show a similar pattern. Pepa's kiosk, which is located in a formal market, is registered with the municipality. In contrast, her home-based business, which is situated deep within an informal settlement and does not have any outward markings to indicate its presence, is not registered with any government entity. Pablo and Bety's cassette business, in a formal market, is licensed by the municipality and registered with SUNAT, while their taxi service is wholly informal. Efraín's unlicensed and unregistered business is operated out of a cart in an informal market, whereas his son's business, a commercial storefront, is both licensed and registered. Ana's home-based store is formalized, while her husband's taxi is not. Laura's in-home store is formal; her husband's mobile appliance repair business is not. Martina's visible home-based store is licensed and registered; her husband's hidden parking garage is not.

These cases match a formalization pattern noted by De Soto (1989) in which the likelihood that an entrepreneur will formalize his or her business rises as the perceived risks of detection by the authorities rise. In the cases described above, enterprises that operate in fixed locations in high-traffic areas such as formal markets are highly visible, increasing the chance of inspection by municipal or state authorities. Enterprises that are mobile or located in low-traffic areas, however, are less likely to be subject to inspection. In accordance with the pattern, the former group of enterprises has been formalized, while the latter remain informal.

#### *E.5.b. Full compliance*

The four households which were in apparent full compliance with government regulations shared an important characteristic: their enterprises are all highly visible. **Raymundo's** (case H) clothing shop and both of **Dolores'** (case E) enterprises are located in one of the best-known and highly trafficked formal markets in Lima. All of the enterprises are both licensed with the municipality and registered with SUNAT. **Jacinta's** (case J) fully compliant enterprise is also located in a bustling formal market. **Jorge's** (case B) home-based store is located in an informal settlement, but it is situated on a hill in the center of the most populous section, and is highly visible. Again, these examples match De Soto's hypothesis that visibility, and hence, vulnerability to detection by authorities, is a primary determining factor in the decision to formalize.

#### *E.5.c. Negative experiences*

Five of the case study participants have had their lives altered significantly by either municipal or state formalization tactics. Of these, four had suffered the shock of forced relocation as authorities cracked down on street vending. Only three, **Raymundo**, **Pablo**, and **Dora** were lucky enough to have affiliated themselves with street vendor's associations which subsequently built markets where they were able to continue their activities. The fourth, **Ana**, was forcibly relocated twice, finally retreating to her home to set up shop. For some of these households, relocation was a shock from which they are still recovering.

Only one informant experienced a significant run-in with SUNAT, but it transformed his business practices. SUNAT accused him of tax evasion and shut down his enterprise:

They showed me the computer: “Look mister, you have been evading taxes and you owe this much.” Well, I got scared and said: “No, I can’t pay. How am I going to pay so much?” I paid what I could at the time, like S/1,500, and couldn’t pay any more, so I couldn’t continue with my business. I tried to pass the enterprise to [a relative]. Now she is taking charge. That’s what we’ve done.

The informant had to take drastic steps to avoid a complete closing of his enterprise, legally ceding it to a relative. He still works in the business, refers to it as his, and reports that he receives cash transfers from the relative. In essence it is still his, but he is no longer the formal owner, and no longer has a taxpayer identification number. Losing the taxpayer identification number was a major blow because without it, he was no longer able to access loans from formal banks. He now has to rely on his wife for portions of the loans that she receives from another bank.

The informant was critical of SUNAT’s tactics, and stated that many of his fellow entrepreneurs have had similar problems. He cited a culture of non-compliance stemming from lax enforcement in the past and insufficient orientation as having led him and others into trouble:

Before we didn’t work with this RUC thing, with SUNAT. Before, one just did what one did, with papers or whatever. We didn’t work with receipts or anything. What’s worse is that they didn’t even come to give us an orientation. If you’re going to introduce something new, you have to orient merchants well. Because it’s not just me, it’s a lot of people. Lots of enterprises and lots of good people that have had the same thing happen to them. There’s just been a lack of orientation for all of the merchants, entrepreneurs, everyone. . . . And you know--they’re always talking, talking [about compliance], so most of the time one doesn’t believe them--until they came. They jumped on all of us--on all of us . . .

Entrepreneurs throughout Lima live in fear of experiences like our informant’s. As many entrepreneurs lack formal education and are not accustomed to keeping books, required practices can prove difficult. Even if they are doing their best to comply, they are often afraid that they are not doing exactly what is required by SUNAT. Such fear is justified because penalties for failure to comply can be swift and severe. Our informant was lucky that his business was not shut down permanently. Stories abound of the “merciless” SUNAT closing enterprises run by widowed or single mothers, cutting off the only source of income for poor households. In 1999, one only had to walk down the street in a busy commercial district such as La Victoria to see closed storefronts plastered with scarlet SUNAT stickers.

The government push for enterprise formalization has affected the case study informants to varying degrees. While some have chosen not to formalize businesses, others have become fully integrated into the system. Microcredit does not appear to have influenced decisions to formalize businesses. Rather, the formalization patterns seem to mirror De Soto’s hypothesis: the more visible an enterprise, the more vulnerable it is to detection, and hence, the more likely it is to be formalized. Government efforts have not come without costs, however. As the experiences of several informants demonstrate, both municipal and federal-level formalization



initiatives have had adverse impacts on enterprises and households. Forced relocations and closings caused sharp reductions in household income for some, reductions which have yet to be recouped even after years of effort.

### **E.6. Summary**

Even though there were increased pressures on entrepreneurs to formalize their enterprises, there was little measurable change between 1997 and 1999. Microcredit appeared to have had a positive impact on municipal licensing, but the nature of the impact was to maintain or slightly increase the level of licensing among the treatment group during a time when the percentage of licensed enterprises in the control group was dropping. The case study respondents report an increase in the pressures from SUNAT to register and pay national business taxes. However, the survey results indicate no significant increases over the period, with the visibility of the enterprise continuing to be the most important factor related to tax registration.

## **F. Summary and Conclusion**

Despite the difficult economic environment for microenterprises between 1997 and 1999, there is some evidence that microcredit had positive impacts on enterprise revenue, fixed assets, employment, transaction relationships, and formalization. In some cases, this impact was to increase the levels of these enterprise performance variables. In other cases, microcredit served to insulate the enterprise from the poor economic climate so that drops in these variables were not as large in clients' enterprises as they were in the enterprises run by people who did not receive microcredit. The main impact findings are summarized below.

### **F.1. Microenterprise Revenue**

There was evidence that microcredit may have had positive impacts on the net enterprise revenue for both the treatment and the new entrant groups. For households in the treatment group, this amounted to some US\$1,000 in annual profits from all enterprises associated with the household. The estimated impact for the new entrant group was an additional US\$740. Gross revenue from all enterprises in the household economic portfolio also appeared to be positively impacted for the treatment group. These impacts occurred during a period when microenterprise revenue was generally stagnant or declining.

### **F.2. Enterprise Fixed Assets**

As anticipated, the asset accumulation process appears to occur relatively slowly. There is statistical evidence that microcredit had a positive impact on accumulation of microenterprise assets among the treatment group, but there is no evidence of this impact for the new entrant group. The results suggest that primary enterprises in the treatment group accumulated US\$500 more in enterprise assets than did enterprises in the control group. Several other factors were found to be related to asset accumulation; most notably, the accumulation of enterprise fixed assets was more rapid in the industrial sector than the commercial or service sectors.



### **F.3. Enterprise Employment**

For all four of the variables measuring the amount of time employed, microcredit appeared to have a positive impact on levels of employment. If all of the microenterprises associated with the households are considered, the results of the impact analysis indicate that those households receiving microcredit provided about nine more days of total employment and 3.25 more days of paid employment per month than households not receiving microcredit. Extending these results to some 40,000 ACP/Mibanco clients, this would imply an additional 17,414 full-time jobs per year, of which 6,259 are paid positions for non-household members. The ability of microenterprises to provide employment is obviously relevant to macroeconomic policy in Peru, where microenterprises employ a significant proportion of the labor force.

### **F.4. Transaction Relationships**

There were few measured impacts of microcredit on transaction relationships. However, the ANCOVA results indicated that microcredit has a positive impact on the incidence of business premise ownership and on the ability of commercial sector enterprises to buy inputs in more advantageous ways. In the case study interviews, the respondents consistently related that microcredit permitted them to buy in bulk for lower prices and to take advantage of special sale prices on inputs.

### **F.5. Formalization**

Despite the increased pressure on entrepreneurs to formalize their enterprises, there was little measurable change in levels of formalization between 1997 and 1999. Microcredit appeared to have a positive impact on municipal licensing, but the nature of the impact was to maintain or slightly increase the level of licensing among the treatment group during a time when the percentage of licensed enterprises in the control group was dropping. The case study respondents report an increase in the pressures from SUNAT to register and pay national business taxes. However, the survey results indicate no significant increases over the period, with the visibility of the enterprise continuing to be the most important factor related to tax registration.

### ***Conclusion***

In general, we would expect that the first impacts of microcredit would be experienced at the enterprise level. The nature of the ACP/Mibanco loan product and the stories of the case study respondents make it clear that, much of the time, loan proceeds are used to augment the working capital of the enterprise. This can serve to boost the performance of the enterprise so that, in the short run, enterprise revenue is increased and, in the long run, enterprise fixed assets are accumulated. Along the way, more people are employed. Ultimately, this improved enterprise performance should translate into positive impacts for the broader household economy. We turn now to examine the impacts of microcredit at the household level.



## Section 6 – Impacts of Microcredit on Households

Many of the individuals and organizations supporting microcredit programs implicitly assume that, by improving the stability and profitability of microenterprises, microcredit can have positive impacts on the incomes and welfare of households. In other words, the assumption is that microcredit can indirectly impact household welfare through its direct effects on enterprise performance. There is also the possibility that microcredit can have direct impacts on household welfare since loan funds are fungible and can be used to directly meet household needs. Of course, all of the direct and indirect impacts of microcredit on household welfare may not be positive. There may be negative impacts on household welfare associated with the cost of credit. It is also possible that benefits to some members of the household will come at a cost to other members.

In this section, we analyze the relationship between microcredit and household welfare by focusing on eight measures of household welfare. The household-level impact variables examined in this section include the following:

- household income,
- diversification of household income sources,
- investments in housing improvements,
- investments in fixed assets for all enterprises,
- accumulation of household appliances,
- investments in education,
- food expenditures,
- effectiveness of coping strategies in dealing with financial shocks, and
- intergenerational launching.

Our objective is to determine whether microcredit has an impact on any of these measures of household welfare and, if so, the magnitude and direction of that impact.

The economic conditions between 1997 and 1999 were difficult for the respondents, with the result that there were significant drops in many of the welfare variables. While household income and the diversification of income sources held steady, there were drops in expenditures on housing improvements, expenditures on appliances, and daily per capita expenditures on food and beverages. Not all expenditures fell, however. Households invested significantly more in education and in combined enterprise fixed assets. Between 1997 and 1999, households also experienced more financial shocks than they had between 1995 and 1997, and they turned more frequently to coping strategies that adversely affected their productive assets.

The question, then, is whether client households fared any better than non-client households during this economic downturn. In fact, there were few statistically significant impacts of microcredit detected at the household level. The most important finding was that microcredit appeared to have a positive impact on household income. On the other hand, there was also evidence that microcredit may have had a negative impact on education expenditures among new entrants to the program.

In this section, we present the detailed findings for each of the household-level hypotheses. As with the microenterprise-level impacts in the previous section, the discussion of each impact variable begins with an explanation of how the variable was measured. This is followed by a section presenting the mean values of the impact variable and describing any changes that occurred in the mean values of the impact variable between 1997 and 1999. The impact results from the ANCOVA analysis are reported in a third section. For some of the variables, there is a separate section reporting on the case study findings. The case study data provided additional information on ways that households use credit as part of their financial management strategies in order to invest in housing improvements, cope with shocks, and create enterprise employment for household members.

## A. Household Income

Household income is a critical indicator of household welfare. Households with higher income levels have more choices, can better meet their basic needs, and enjoy broader opportunities. One of the findings of this study is that the clients of the ACP/Mibanco program are not the “poorest of the poor” in Lima. Nevertheless, some 27 percent of the treatment group had incomes below the poverty line in 1997. The overall incidence of poverty was somewhat higher among households in the control group (38 percent).<sup>66</sup> Less than three percent of households in either the treatment group or the control group could be classified as “extremely poor.”

### MEASURING INCOME AND POVERTY

Income can be measured using the income approach, which counts sources and levels of income, or the expenditures approach, which counts all household expenditures. The expenditures approach is widely believed to be both more accurate and more time consuming. In this study, income is measured both ways. The LSMS poverty line is derived from expenditure data, while the \$1 and \$2 a day poverty lines are calculated using income data. A separate analysis conducted on the 1997 data (n=701) indicated that the relatively rapid income approach used in this study was the best of several tested indicators for predicting the LSMS-derived poverty levels of households (Meyer, Nagarajan and Dunn 2000).

### A.1. Measuring Household Income

In this study, all sources of income for all members of the household were added together to derive an estimate of household annual income. These income sources included part-time and full-time wage employment, rental income, income from agriculture, and remittances. On average, households reported slightly more than three sources of income. However, income from microenterprises was the most important source, generating approximately 65 percent of total income.<sup>67</sup>

<sup>66</sup> For additional discussion of the poverty levels of the households in the sample, see chapter IV (section A.5).

<sup>67</sup> For additional discussion of the sources and composition of household income, see chapter IV (section A.3).

### **A.2. Changes in Household Income Levels**

Total household incomes were relatively unchanged between 1997 and 1999. This was true for the sample as a whole as well as for each of the three treatment groups. The mean values of household income reported in table 6.1 show small increases between 1997 and 1999. However, when considering the ten percent price inflation between the two rounds of the survey, only the new entrant group may have had an increase in real income over the period. None of the comparison groups experienced a statistically significant change in household income between 1997 and 1999.

Table 6.1. Average Annual Household Income (1997 and 1999)

	Annual Household Income from All Sources (soles)		Annual Per Capita Income from All Sources (soles)	
	1997	1999	1997	1999
Total Sample	19,533	20,429	4,220	4,649 <sup>1</sup>
Treatment Group	22,756	23,600	4,795	5,316 <sup>2</sup>
Control Group	14,941	15,779	3,488	3,798
New Entrant Group	15,438	17,013	3,139	3,403

Note: Outliers more than 3 z-scores from the mean were removed.

<sup>1</sup> Significantly different from the 1997 average at  $p < .01$ .

<sup>2</sup> Significantly different from the 1997 average at  $p < .05$ .

The gain score analysis revealed that there were no significant differences in the income gains of the different treatment groups. That is, the average change in income was similar for all three groups. The relatively large absolute difference between the average income of the treatment group and the average income of the control group was evident following the first round of the survey. Because of this income gap, and because of the influence that income is expected to play on other household-level variables, household income was included as a moderating variable in the statistical analysis for the remaining household-level impact variables.

### **A.3. Impacts on Household Income**

The results of the ANCOVA analysis comparing the treatment and control groups indicated that microcredit has a positive impact on total household income (table H-1). Given two households with the same level of income in 1997, the same number of economically active members, and the same number of income sources, the household that received microcredit was estimated to have S/4,556 more income in 1999 than the household that did not receive microcredit ( $p < .01$ ). After considering inflation, the results indicate that households in the treatment group had S/4,142 more in real income in 1999 than households in the control group.

Because there were differences in household size, the impact of microcredit on household income was also analyzed on a per capita basis. These results also indicate a positive impact of microcredit, with households in the treatment group having S/995 more in per capita income than

households in the control group ( $p < .01$ ). This is a difference of S/905 in real income per capita, or about US\$266 per household member per year.

The number of economically active members in the household was positively related to increases in income between 1997 and 1999. Starting with the average number of three workers, an additional worker in the household was estimated to increase household income by S/1,387 ( $p < .01$ ). It makes sense that more workers would generate more income. On the other hand, the number of income sources was not related to increases in income. This provides some indication that income diversification is not necessarily associated with higher incomes. The next section addresses income diversification in more detail.

#### **A.4. Summary**

The results indicate that microcredit may have had a positive impact on total household income. In real terms, the magnitude of this difference was estimated to be US\$266 per person per year. In the previous section, microcredit was shown to have a positive impact on the contribution to household income from microenterprises. The results for total household income indicate that the increases in enterprise net revenues are being translated into higher total household incomes. In other words, the gains in enterprise income are not being off-set by losses in other types of income, such as wage income. This is an important result, as it indicates that the benefits from microcredit result in substantial increases in household welfare. Given two households starting with similar 1997 incomes, the household that received ACP/Mibanco credit could be expected to have over US\$1,200 more in real income in 1999 than the household that did not receive this microcredit.

### **B. Income Diversification**

The presumed relationships between microcredit, income diversification, and household welfare are not as clear as for the other impact variables. Whether increased income diversification is beneficial or detrimental to household welfare may depend on the income level of the household. The economic theory of household decision making under risk indicates that low-income households may diversify their income sources in order to reduce income variability and smooth their incomes over time (Dunn, Kalaitzandonakes and Valdivia 1996; Dunn 1997). The disadvantage to these households of using diversification as a risk-reducing strategy is that it may result in lower overall levels of expected income. In other words, for poor households, income diversification may be a risk-management strategy that results in somewhat lower but more reliable income levels.

Households with higher incomes may not be as concerned with income variability since, even in a bad year, their income should be high enough to satisfy their basic subsistence needs. Instead of diversifying, households with higher incomes may choose to specialize and concentrate their resources in one microenterprise. By concentrating on the growth and expansion of a single enterprise, these households may be attempting to maximize their total expected income. They are willing and able to tolerate income fluctuations in order to earn higher income over time.

### **B.1. Measuring Income Diversification**

The same data that were used to measure total household income were used to measure income diversification. These data included information on the number of income sources and amount of income from each source. All types of income for all household members were included in the construction of a measure of income diversification known as the inverse Simpson index:

$$1/q \text{ where } q=p_1^2+p_2^2+p_3^2+\dots+p_N^2$$

The  $p_i$  used in calculating the inverse Simpson index represent the proportions of total income earned from each of the  $N$  sources of income.

The inverse Simpson index is affected by both the number of income sources and how evenly income is spread across the sources. The index can range from 1, meaning all income comes from one source, to a number as high as the highest number of income sources. If all sources do not contribute equally to total income, then the index is less than the total number of income sources. For example, consider the households below, which have different levels of diversification:

- Household A has one source of income.  
Diversification index =  $1/1 = 1$
- Household B has three income sources, and each source contributes one-third of total household income.  
Diversification index =  $1/[(1/3)^2 + (1/3)^2 + (1/3)^2] = 1/(.333) = 3$
- Household C has three income sources, with the first source contributing one-half of total household income, and the remaining two sources contributing one-quarter of total household income each.  
Diversification index =  $1/[(1/2)^2 + (1/4)^2 + (1/4)^2] = 1/(.375) = 2.67$
- Household D has three income sources, with the first source contributing nine-tenths of total household income, and the remaining two sources contributing one-twentieth of total household income each.  
Diversification index =  $1/[(9/10)^2 + (1/20)^2 + (1/20)^2] = 1/(.815) = 1.23$

As can be seen from the examples, household B has the highest level of diversification, because the total income is received evenly from three sources of income. Household D, on the other hand, also has three sources of income, but the bulk of total income is received from only one source. At 1.23, the measured level of diversification for household D is only slightly higher than for household A, which is not diversified at all.

### **B.2. Changes in Diversification**

For the sample as a whole, the level of income diversification remained stable between the two rounds of the survey. As can be seen in the first two columns of table 6.2, this stability in the

level of diversification was true for the treatment, control, and new entrant groups. A comparison across groups, however, reveals that the treatment group households were slightly more diversified than the control group households in both 1997 and 1999.

Table 6.2. Average Levels of Income Diversification, for All Households and by Poverty Level, as Measured by the Inverse Simpson Index (1997 and 1999)

□	All Households		Non-Poor Households		Poor Households	
	1997	1999	1997	1999	1997	1999
Total Sample	2.21	2.22	2.16	2.20	2.31	2.26
Treatment Group	2.36 <sup>1</sup>	2.32 <sup>2</sup>	2.30 <sup>1</sup>	2.27	2.49 <sup>2</sup>	2.47 <sup>1</sup>
Control Group	2.00	2.08	1.92	2.14 <sup>3</sup>	2.13	1.99
New Entrant Group	1.94	1.98	1.69	1.65 <sup>2</sup>	2.15	2.27

Note: Outliers more than 3 z-scores from the mean were removed.

<sup>1</sup> Significantly different from the control group average at  $p < .01$ .

<sup>2</sup> Significantly different from the control group average at  $p < .05$ .

<sup>3</sup> Significantly different from the 1997 average at  $p < .05$ .

Because of the possible relationship between poverty and income diversification, the sample was disaggregated by poverty level. This allowed additional differences to emerge. As with the sample as a whole, the poor in the treatment group were slightly more diversified than the poor in the control group in both 1997 ( $p < .05$ ) and 1999 ( $p < .01$ ). Among non-poor households, the results indicate that the treatment and control groups followed different trends between 1997 and 1999: the level of diversification among the treatment group changed little over time while the control group became significantly more diversified. The result was a statistically significant gain score of 0.25 ( $p < .05$ ).

### **B.3. Impacts on Diversification**

The results of the ANCOVA analysis indicate that the impact of microcredit on income diversification may depend on both the poverty level of the household and the amount of time in the program (table H-2). For poor households, microcredit appears to have had a positive impact on income diversification. In other words, given the same levels of income and diversification in 1997, poor households in the treatment group maintained their original levels of diversification while diversification among households in the control group fell ( $p < .10$ ).

For non-poor households, the impact of microcredit on diversification was only evident in the comparison of the control group to the new entrants. For non-poor households starting with similar levels of diversification and income in 1997, those who took a first loan from ACP/Mibanco between 1997 and 1999 maintained or reduced their original levels of diversification, while those in the control group increased their levels of income diversification between 1997 and 1999 ( $p < .05$ ).



As expected, the number of economically active members in the household was positively associated with diversification ( $p < .01$ ), but the magnitude of this relationship was much smaller than might be anticipated. One possible reason is that there is a tendency for household members to work together in the households' microenterprises rather than to routinely seek separate sources of income. Another interesting finding among the moderating variables was that, for the poor, the level of household income was inversely related to the level of income diversification. This indicates that, among the poor, those with the lowest levels of income tend to have the highest levels of diversification.

#### **B.4. Summary**

The findings are consistent with the following assumptions:

- income diversification is an optimal strategy for the poor and near-poor because it allows them to effectively manage the risk of income fluctuations;
- income specialization is an optimal strategy for households with higher incomes because it allows them to maximize their expected household income; and
- households that receive microcredit have greater flexibility to pursue their optimal strategies because they have more financial management options.

The results for the poor households in the sample indicated that, as a group, the poor have higher levels of income diversification than the non-poor. This is consistent with the view that poor households use diversification as a strategy for ensuring a steady, albeit low, income. Poor households in the treatment group appear to be more successful at this strategy, since they have significantly higher levels of diversification. Moreover, during the recessionary period between 1997 and 1999, the poor in the treatment group were better able to maintain their levels of diversification than the poor in the control group. The impact of microcredit on the poor, then, may have been to help them hold their levels of income diversification steady while households without microcredit were becoming less diverse.

Among the non-poor, there appear to be different forces at work. The ANCOVA results from a comparison of non-poor households in the new entrant and control groups indicate that microcredit had a negative impact on diversification. Recall that the new entrant and control group households had similar levels of income diversification in 1997. Those households without microcredit (the control group) appear to have responded to the recession by increasing their levels of income diversification. This strategy helped to ensure a steady income, but at the cost of lower expected income. Those households with microcredit, both in the treatment group and the new entrant group, responded to the recession by holding on to their existing levels of diversification/specialization.

Non-poor households in the treatment group may have already reached their optimal levels of diversification by the time of the first round of the survey. Despite the recession between 1997 and 1999, these households did not seek to change their levels of income diversification. Instead, they appear to have used microcredit to maintain or expand the scale of their enterprises,

thus protecting enterprise revenue. The control group households, on the other hand, experienced significant drops in microenterprise revenues. This may have motivated the control group households to seek additional sources of income, or to balance income generation more evenly across sources, thus increasing their levels of diversification.

### **C. Household Assets**

Three types of household assets are considered in the study: 1) housing investments; 2) household appliances; and 3) combined enterprise fixed assets from all enterprises. The results for enterprise fixed assets were discussed in the previous section on enterprise-level impacts (section five), where it was shown that the value of combined enterprise fixed assets increased over time for the entire sample. For combined enterprise fixed assets, there were no significant differences between groups and no measurable impact of microcredit.

There was also no evidence of a microcredit impact on spending for housing improvements or household appliances. In fact, there were sharp drops in both of these spending categories between 1997 and 1999. These drops can probably be attributed to the downturn in the economy. Households' purchases of small and large appliances for personal use, such as fans, televisions, stoves, and blenders, serve primarily to increase standards of living. During difficult economic times, it appears that households temporarily delay the acquisition of many of the non-essential appliances. The reductions in housing investments were also probably temporary, as a means for reducing expenditures between 1997 and 1999.

Housing investments can serve both to increase the household's standard of living and to improve its income-generating opportunities. The results on housing improvements can best be understood within the context of the settlement patterns in and around Lima. Within this context, it is common for individual houses to start as small shacks and be finished slowly over many years (see section two). Because of this, housing improvements are perhaps the most common and significant investment activity undertaken by Lima's low-income households.

For many households, the house, if it is owned, is the most valuable asset. As a house is improved, it appreciates in value, increasing a household's material wealth. It provides shelter and contributes directly to the material well-being of the household, but it can also serve as the foundation for strategies to generate additional income.

Housing improvements can serve to create or enhance a business premise. Some housing improvements create a storage space for inventory or other enterprise-related items. Rooms and storefronts can be added to the house to be used for rental or enterprise purposes. Such improvements can help households to diversify and to add a steady income stream to their economic portfolio. Rental units can provide a source of income after retirement. In these ways, housing improvements can be an integral part of the household members' long-term economic strategies.

### C.1. Measuring Household Assets

Housing investments and spending on household appliances were both measured in terms of expenditures in the previous year. For housing investments, all expenditures on labor, materials, and unused (saved) materials were elicited from the respondent. To measure household appliances, an inventory of household appliances was conducted, and respondents were asked to report the purchase price for appliances acquired in the previous 12 months. By contrast, enterprise fixed assets were measured in terms of their estimated current value.

### C.2. Changes in Investments in Household Assets

As can be seen in table 6.3, there was a clear tendency for households to reduce their expenditures on housing improvements and household appliances between 1997 and 1999. The treatment group, which spent the most in 1997, also had the greatest reductions in spending over the two-year period. The drop in spending was most dramatic for household appliances. The gain score results indicate that the drop in expenditures on appliances by the treatment group was over S/500 more than the drop by the control group ( $p < .01$ ). The reductions in investments on housing improvements were less dramatic, with no significant differences in the gain scores for different groups.

Table 6.3. Investments in Housing and Appliances (1997 and 1999)

	Annual Spending on Housing Improvements (soles)		Annual Spending on Household Appliances (soles)	
	1997	1999	1997	1999
Total Sample	607	416 <sup>1</sup>	1,096	549 <sup>3</sup>
Treatment Group	700	453 <sup>2</sup>	1,368	631 <sup>3</sup>
Control Group	488	360	680	457 <sup>1</sup>
New Entrant Group	449	384	821	311 <sup>2</sup>

Note: Outliers more than 3 z-scores from the mean were removed.

<sup>1</sup> Significantly different from the 1997 average at  $p < .10$ .

<sup>2</sup> Significantly different from the 1997 average at  $p < .05$ .

<sup>3</sup> Significantly different from the 1997 average at  $p < .01$ .

Incidence of housing improvement also dropped between 1997 and 1999, from 52 percent to 40 percent for the sample as a whole ( $p < .01$ ). Though respondents made fewer housing improvements in the year prior to the 1999 survey than in the year before the 1997 survey, the fact that 40 percent of households made improvements in spite of the recessionary economy underscores the importance of such investments for Lima's microentrepreneurs.

### C.3. Impacts on Investments in Household Assets

Within the context of the sharp reductions in spending on housing and appliances between 1997 and 1999, the results of the ANCOVA analysis did not indicate any measurable impacts of microcredit (table H-3). That is, the ANCOVA results did not suggest any differences in spending on housing improvements or household appliances between households that received microcredit and those that did not.

While there were no indications of microcredit impact from the ANCOVA analysis, there were several moderating variables that were related to spending on assets. For example, expenditures on appliances were related to the age of the respondent and to household income levels. Households of older respondents spent less on appliances ( $p < .05$ ), possibly because they already had most of the appliances that they wanted or needed. As expected, households with higher incomes spent more on appliances ( $p < .10$ ).

There is some evidence that expenditures by the control and new entrant groups are more sensitive to changing income levels. While there was a relationship between household income and spending on appliances for the analysis of the treatment and control groups ( $p < .10$ ), it was stronger in both magnitude and significance for the comparison of the new entrant and control groups ( $p < .01$ ). There was also a significant and positive relationship between household income and investments in housing ( $p < .01$ ) found in the ANCOVA comparison of the new entrant and control groups.

#### FACTORS AFFECTING HOUSING INVESTMENTS

A regression analysis of factors affecting the value of housing improvements, based on the 1997 data ( $n=698$ ), indicated the following:

- non-poor households spent S/940 more than poor households,
- households with enterprises in marginal zones spent S/660 more than those with enterprises in popular zones,
- households with secure tenure spent S/270 more than households with insecure tenure,
- households with a higher percentage of total income from wages spent S/430 more than those with lower percentage from wages.
- other variables included in the regression--receipt of microcredit and enterprise sector--were not significantly related to housing improvements (Dunn, Arbuckle and Yanagishima, 1999).

### C.4. Housing Improvements as Multipurpose Investing

The case study data provide detailed information on the ways that households invest in housing improvements. Of the eleven households in the case studies, nine had made some form of housing improvement in the previous two years. Two households had made these improvements solely to enhance living conditions, while the rest made the investments in order to establish or improve a business or other income-generating activity. Of the seven households that made housing improvements as business investments, four built or improved storefronts and three

constructed rental rooms.<sup>68</sup> In nearly every case, loans (primarily from sources other than ACP/Mibanco) played a prominent facilitating role in achieving housing improvement goals.

#### *C.4.a. Improving living conditions*

For **Dora** (case G), construction on her house represented a major step upward in social status and self-esteem. For years, Dora's house had dirt floors and a fiberboard roof. The condition of her house was a source of embarrassment to her. When she began to participate in ROSCAs, she discovered that she could use the proceeds to slowly improve her home. Starting with the ROSCA funds, Dora began to invest in building materials such as bricks, cement, and reinforcing bar. Over time, she was able to install a cement floor and build several rooms. As she was accumulating supplies for the roof, she heard about Banco de Materiales, a bank which provides in-kind loans in the form of building materials.<sup>69</sup> She applied for, and received, a loan for S/6,000 worth of materials. To pay for labor, she used a loan from ACP/Mibanco as well as some small loans from family and friends. She completed both the roof and several rooms on the second floor. Now that she has repaid all but the loan from Banco de Materiales, she feels satisfied with her accomplishment, stating: "I now feel a little better, because for years I lived in a half-finished house and now I have a roof, a place to live, a house."

#### *C.4.b. Starting a new enterprise*

**Pablo and Bety** (case D) have made significant improvements to their home in order to prepare a space for a grocery store that they hope will provide Pablo with a safer, more stable income source than the taxi he currently drives. After a first attempt to leave the transportation business failed when a market stall was sold out from under them, they began to save surplus income in the form of construction materials, much as Dora had. Once they collected the necessary materials, their plan stalled because they could not seem to save the S/5,000 needed to pay for labor. Bety had listened to her husband talk for years about the roof that they would someday build for their house. Tired of waiting, she put aside an entire ACP/Mibanco loan of S/2,000 for the roof. After she had finished making the payments on the one loan, she took a second one, combined the money, and raised the roof. Pablo and Bety are happy to have finally attained their goal. They attribute their success to loans, stating that they would never have been able to save enough money on their own.

#### *C.4.c. Building rooms for rent*

**Efraín** (case F), too, feels that he would not have been able to construct his three new rental rooms if it had not been for loans. When asked how he financed the construction, Efraín explained that he did it by using a combination of loans and enterprise revenue.

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<sup>68</sup> That nine of eleven case study households had made some kind of improvement and three out of eleven had rental units may seem inconsistent with the survey data which indicate that only 40 percent of the households in the survey sample had made improvements and only three percent reported rental income. The case study households were not selected randomly, however, so cannot be viewed as representative of the overall population.

<sup>69</sup> Banco de Materiales is a government-supported entity that provides in-kind loans of housing materials such as bricks, cement and reinforcing bar. Loans are relatively long-term and installments are low. Private financial entities, such as Banco Orion, were also beginning provide similar in-kind loan products during the study period.

Because one cannot do it all at once, we have done it a little at a time. The loan is a help, since it is for the business. One buys merchandise, sells it, and makes payments, thus it is a help. . . . We've used two or three loans, more or less, but we never use the whole loan, only part. The other part is always invested [in merchandise]. Once it is invested, one sells, and with the earnings one buys what is still needed. . . . First I bought a thousand bricks, then another thousand. Then I would buy cement, four or five bags, according to what the mason asked for. If he needed reinforcing bar, I would buy it.

Thus, Efraín invests loans both in inventory and directly in improvements. That he has made significant progress is of great importance to him, because he views rental rooms as his pension program, relating that: “[construction on] the second floor is for rental purposes. It will allow me to have another income that will help me when I’m older, in case I can’t work in the business.” He does not plan to retire for some time, but he is looking ahead to a day when he might not be able to work, and wants to ensure that he and his invalid wife have enough income to live on.

#### *C.4.d. Diversifying income-generating activities*

**Ana’s** (case A) home improvements have resulted in a diversified mix of home-based income-generating activities. After establishing her store on one side of the first floor, she rented the other side to a couple who renovated it and opened a glass store. She and her husband have since used loans from several banks and cooperatives to add two more floors to the house. These additions will eventually house apartment units. When she reaches her improvement goals, the household will derive income from the store, the rented storefront, and the apartments, greatly increasing overall income and helping them to pay for their children’s education:

We are building with the goal of educating the children, because we plan to rent [apartments]. With the rent we will educate the little ones, because there are five and my husband’s salary is not enough.

Though their push to make housing improvements has been credit intensive, loans for housing improvements were taken by her husband from sources other than ACP/Mibanco. Though she may help her husband make payments on non-ACP/Mibanco loans with revenue from her enterprise, Ana continues to use her ACP/Mibanco loans solely for her enterprise.

Like Ana, **Martina** and **Mario** (case M) envision their home as a diversified commercial center housing a mix of enterprises including their store, a restaurant, rental rooms, and a hostel. To date, they have used enterprise revenue and loans from their cooperative to complete five rental rooms. These now generate income that has helped them to pay bills and has relieved pressure on the primary enterprise. The restaurant is still in the idea stage, though they are contemplating the purchase of furniture on credit from a nearby carpenter. They are now in the process of saving for new improvements, and hope to finish the second-floor roof when they are eligible for a new loan from their cooperative. This step will enable them to complete several more rooms and move them closer to their dream of constructing a third-floor hostel.



Martina and Mario do not invest ACP/Mibanco loans directly in housing improvements. They prefer to use loans from their cooperative for this purpose, and reserve their ACP/Mibanco loans exclusively for inventory. By focusing ACP/Mibanco loans solely on their enterprise, they are able to generate sufficient revenue to cover household needs, repay ACP/Mibanco, and make payments on their loan from their cooperative.

#### *C.4.e. Accumulating building materials*

**Jorge and Patricia** (case B) made substantial improvements to their general store just prior to the first round of the survey in 1997. Over a period of several years they had slowly purchased building materials, moving toward a goal of replacing the wood and reed walls of their store with more permanent materials. Once they had accumulated nearly all of the materials they needed, they took a loan from Banco de Materiales and built a modern-looking concrete storefront.

Having reached their first goal of making their store presentable, Jorge and Patricia continue saving for future improvements by purchasing housing materials at intervals that coincide with strong holiday sales. Patricia related that when she receives extra revenue from Christmas sales, for example, she buys the materials that she lacks:

Usually we buy in large quantities. For example, we recently bought 2000 bricks that we have sitting out back. Before that, I bought some reinforcing bar and stored it. Or, I might buy some cement and put it aside. When I have everything I need together, I work it out with the mason--all I have to pay for is the labor; the rest I already have. Here you just can't do everything at once. . . . For example, I built what you see using revenue from Christmas sales. I had a good season. In other words, you sell 3,000 or 4,000, and put aside 2,000. So from that [4,000] I have that [2,000] saved. I say [to my husband] that we have to buy this [material] and we go buy it. The same for *Fiestas Patrias*--another bunch of bricks to buy. And that's how it goes, little-by-little. . . . It's the only solution. If I hadn't done that, we would have nothing.

For Jorge and Patricia, the strategy of saving housing materials over time is effective. By purchasing bricks and other materials whenever they can, they move slowly closer to their housing improvement goals while also protecting themselves against increases in the price of those materials. Since they save materials over time, they only have to cover labor when they are finally ready to build.

This seemingly effective medium-term housing improvement strategy is shared by several informant households. First, informants tend to purchase small quantities of building materials over time, slowly building up their stocks while protecting themselves from increases in the price of those materials. Slow accumulation is necessary because the sums available for such investments are often very small. Since it is difficult to save sufficient cash to pay for labor, once they have sufficient quantities of materials to make substantial improvements, they seek a loan to pay for labor costs. This strategy is effective because it enables them to incur the bulk of

expenses (the cost of materials) in small increments prior to construction and significantly reduces the amount of debt that they must take on to make the improvements.

For case study informants, housing investments can mean more than just improved shelter. It is also a key economic strategy diversifying income sources, increasing or stabilizing overall household income, or otherwise improving their businesses. The construction of rental units, in particular, is desirable because rental income tends to be steady and does not require much time and effort from the entrepreneur. Such improvements can impart almost immediate benefits on households as well as improve their long-term economic positions. That such improvements are so often facilitated by loans is noteworthy because loans clearly allow entrepreneurs to undertake construction which might otherwise take years or never be realized at all.

It is important to note that with the exception of two informants, ACP/Mibanco credit does not play a major, direct role in housing improvements. Rather, informants tend to turn to other sources, such as Banco de Materiales, commercial banks, or cooperatives for the bulk of their housing improvement loans. Some informants do, however, use revenue from ACP/Mibanco credit-supported enterprises to make payments on loans from other sources. For these households, ACP/Mibanco credit appears to play an indirect role in the financing of housing improvements.

### *C.5. Summary*

The findings related to household assets were heavily affected by the recessionary context between 1997 and 1999. Spending on household appliances and housing investments dropped while people focused their resources in other areas, such as increased investments in enterprise fixed assets and increased investments in education (described in the next section). Those households that were spending the most in 1997 also made the greatest reductions in their expenditures between 1997 and 1999, indicating the discretionary nature of these expenditures.

All of the available evidence indicates that housing is a critical investment category for the entrepreneurial households in Lima. In this setting, housing is a multipurpose investment, providing improved quality of life, enhanced microenterprise income, auxiliary rental income, and even retirement income. The observed reductions in expenditures on housing improvements between 1997 and 1999 should probably be interpreted as a temporary slow-down in reaction to the poor economy. It is likely that housing investments will increase to keep pace with any future improvements in the economy.

The statistical results provided no evidence of an impact of microcredit on either appliances or housing investments. On the other hand, the case study results indicate that there is an important role for credit in facilitating housing investments, both directly (direct use of loans for housing improvements) and indirectly (use of loans to increase revenues which are then used for improvements). However, loans from sources such as the Banco de Materiales, formal banks, and cooperatives play a more prominent role in housing improvements than do loans from ACP/Mibanco. Since only client households were included in the case studies, no qualitative data are available on housing investments among households in the control group.



It may be that the motivation to invest in housing is so universal among the study population, that there is no specific additionality from microcredit *per se*. Indeed, the survey results indicate that households in both the treatment and control groups may use whatever resources they have at their disposal--whether home improvement loans, microcredit, ROSCAs, enterprise revenues, wage income, savings, or loans from families and friends--to make investments in housing. At the time of the 1999 survey, formal in-kind housing loans were becoming widely available to the households in the study population. The specific impact that microcredit would have on housing investments during an expansionary economic period is still open to debate.

## **D. Spending on Education**

The low-income and working class families of Lima place great emphasis on the education of their children. It is more common for children from these families to attend private schools than public schools, and the children are moved to better, more expensive private schools when their families have the means to afford it. There are many expenses associated with schooling, including registration fees, tuition, uniforms, books, supplies, transportation, and meals. While parents of children in public schools do not pay tuition, they are required to buy uniforms, books, supplies, and to pay various fees. Most parents in the sample would agree that the level of spending on education is a good indicator of the quality of the education a child receives.

School enrollment is very high for children in the households sampled. Ninety-nine percent of the children ages seven to 16 were enrolled in school in 1999 (n=525). These enrollment rates did not differ between treatment and control groups. However, there were small gender differences in enrollment rates: 99.6 percent of female students in this age group were enrolled, which was slightly higher than the 98.1 percent enrollment rate for male students ( $p < .10$ ). It was also common for older children to attend some type of post-secondary school.

### **D.1. Measuring Education Expenditures**

The impact variable measured in this study was the level of education expenditures per student. This measure of expenditures included registration fees, tuition, uniforms, books, supplies, transportation, meals, and miscellaneous fees. The unit of analysis is the household, and only households that had expenditures in both 1997 and 1999 were included in the sample for the impact analysis. This reduced the size of the overall sample for the ANCOVA analysis to 391 households.

### **D.2. Changes in Education Expenditures**

There were significant increases in education expenditures between 1997 and 1999 (table 6.4). This was true for the sample as a whole, where spending rose by nearly five percent in real terms, as well as for both the treatment and control subgroups. Education expenditures by households in the treatment group rose by three percent in real terms. There were larger increases among the control group households, whose expenditures rose over ten percent in real terms. The fact that households increased their education expenditures over this period stands in sharp contrast to the curtailed expenditures in other important areas, indicating that education is clearly a priority for many households in the sample.

Educational expenditures among the new entrants to the ACP/Mibanco program, on the other hand, moved sharply in the opposite direction. Mean expenditures on education among new entrant households dropped by almost 23 percent in real terms over the study period. When compared to the control group, the gain score for education spending for the new entrant group was S/166 lower ( $p<.01$ ). This confirms that expenditures among the control group and the new entrant group were moving in opposite directions.

Table 6.4. Average Annual Education Expenditures (1997 and 1999)

	Education Expenditures per Student (soles)	
	1997	1999
Total Sample (n=377)	510	584 <sup>1</sup>
Treatment Group (n=225)	524	594 <sup>2</sup>
Control Group (n=125)	510	619 <sup>1</sup>
New Entrant Group (n=27)	389	331

Note: Outliers more than 3 z-scores from the mean were removed.

<sup>1</sup> Significantly different from the 1997 average at  $p<.01$ .

<sup>2</sup> Significantly different from the 1997 average at  $p<.05$ .

Within this context, it is interesting to note that education expenditures are higher for female students than for male students. Among the 1004 students of all ages in 1997, many of whom are older than 16, expenditures on tuition were S/55 less for males than females ( $p<.05$ ). And in 1999, when there were a total of 963 students of all ages, total education expenditures for female students exceeded expenditures for male students by S/132 ( $p<.05$ ). Differences in specific categories included S/23 more on registration fees for female students ( $p<.10$ ) and S/116 more on tuition ( $p<.01$ ).

### **D.3. Impacts on Education Expenditures**

The results of the ANCOVA analysis indicate that microcredit may have a negative impact on education expenditures among households in the new entrant group (table H-4). For households starting at the same level of education expenditures in 1997, and having the same level of income and number of students, households in the new entrant group were estimated to spend S/199 less per student in 1999 than households in the control group ( $p<.01$ ). This is equivalent to about US\$59 per student per year. Specific expenditure categories in which the new entrant households spent significantly less in 1999 than the control group households included registration, tuition, books, and transportation (all at  $p<.01$ ).

There was no evidence of an impact of microcredit on the education expenditures of the treatment group. Instead, among the treatment and control group households, education expenditures in 1999 were more closely related to the level of household income than the receipt of microcredit. Starting at an income level of S/20,000, an increase in annual income of S/1,000 was estimated to lead to an increase in annual spending of S/4 per student ( $p<.01$ ).

#### **D.4. Summary**

The results on education expenditures indicate that microcredit may have had a negative impact on education spending among new entrants. The ANCOVA results indicate that new entrant households spent around US\$59 less than control group households on the education of each student. One possible explanation for this finding is that new entrants reduced their investments in education in order to adjust to the exigent demands of credit repayment. This does not imply that the students were being withdrawn from school. Instead, it probably indicates that they were receiving less expensive, and possibly lower quality, education.

The ANCOVA analysis comparing the treatment and control groups did not provide any evidence that microcredit had either a positive or negative impact on education expenditures. Apparently, if microcredit has a negative impact on education expenditures among new entrants, this reduction in education spending can be interpreted as a temporary impact. At least two years after receiving the first loan, this negative impact is no longer evident.

Apart from the impact results, the more general finding is that, despite reductions in most other areas of household expenditures, there were significant increases in expenditures on education between 1997 and 1999. This was true for the sample as a whole as well as for both the treatment and control groups. These increases in spending on education are even more impressive when contrasted with the contraction in spending on appliances and housing, and may reflect either a growing emphasis on education among households in the sample, inflation in education-related expenses, or both. Enrollment rates for children ages seven to 16 were extremely high (99 percent) in 1999, and there were a many children in post-secondary settings. The results also indicate that households were investing heavily in the education of girls.

### **E. Spending on Food**

The statistical results for the sample as a whole indicate that 1) there were small reductions in per capita food expenditures between 1997 and 1999 and 2) there is no evidence that microcredit had an impact on food expenditures. However, a separate analysis of poor and non-poor households indicates that the food expenditure response to economic conditions between 1997 and 1999 was related to the poverty level of the household. Poor households did not reduce their food expenditures significantly during this time. There is also limited evidence from the ANCOVA analysis that microcredit may have had a positive impact on per capita food expenditures among poor households in the treatment group.

#### **E.1. Measuring Food Expenditures**

The measure of spending on food used in this study included all food, whether prepared at home or purchased away from home, and all beverages. Total food and beverage expenditures for the household were divided by the number of household members to create a daily per capita measure of food and beverage expenditures.

## E.2. Changes in Food Expenditures

There was a significant reduction in daily per capita food expenditures between 1997 and 1999 (table 6.5). In real terms, this represents a 13 percent reduction in food and beverage expenditures. All of the comparison groups experienced drops in food expenditures between 1997 and 1999, but none of these were statistically significant.

Table 6.5. Average Daily Per Capita Food and Beverage Expenditures, for All Households and by Poverty Level, in soles (1997 and 1999)

	All Households (n=501)		Non-Poor Households (n=332)		Poor Households (n=168)	
	1997	1999	1997	1999	1997	1999
Total Sample	3.93	3.76 <sup>1</sup>	4.42	4.07 <sup>2</sup>	2.95	3.16 <sup>4</sup>
Treatment Group	3.99	3.87	4.42	4.06 <sup>3</sup>	2.89	3.36 <sup>2</sup>
Control Group	3.90	3.68	4.46	4.14	2.97	2.96
New Entrant Group	3.60	3.30	4.19	3.68	3.13	2.99

Note: Outliers more than 3 z-scores from the mean were removed.

<sup>1</sup> Significantly different from the 1997 average at  $p < .10$ . <sup>3</sup> Significantly different from the 1997 average at  $p < .05$ .

<sup>2</sup> Significantly different from the 1997 average at  $p < .01$ . <sup>4</sup> Significantly different from the 1997 average at  $p = .105$ .

When the sample is separated by poverty level, however, it is possible to see that food expenditure patterns of poor and non-poor households followed very different trends. Among the non-poor households, there was a significant drop in food expenditures over the period. For all non-poor households, there was a drop from S/4.42 to S/4.07, which represents a 16 percent reduction in real terms over the period. This reduction in spending should be interpreted as a trimming of the food budget to eliminate higher cost items rather than as a reduction in spending with negative nutritional repercussions.

Poor households reacted differently to the economic conditions. To start with, they were spending less on food in 1997 than were the non-poor households. In the period between 1997 and 1999, they did not respond by reducing food expenditures. Instead, poor households in the treatment group actually increased their per capita daily food expenditures by five percent in real terms ( $p < .01$ ). Poor households in the control and new entrant groups did not experience any statistically significant changes in food expenditures over the period. This resulted in a statistically significant difference in the gain scores for the treatment and control groups of about S/0.50 ( $p < .10$ ), indicating that poor households in the treatment group expanded their per capita food expenditures slightly more than did poor households in the control group.

### **E.3. Impacts on Food Expenditures**

The results of the ANCOVA analysis provide no indication that microcredit had an impact on per capita food expenditures for the sample as a whole (table H-5). However, a separate ANCOVA analysis of poor households provided limited evidence that microcredit had a positive impact on food expenditures. The size of this impact was relatively small at about S/0.34, or US\$0.10 (ten cents) per person per day. In addition, this estimate of impact was only marginally significant, at  $p=.155$ . So, the evidence of a positive impact on food expenditures among poor households is relatively weak and should be viewed with caution.

### **E.4. Summary**

As a group, the households in the sample reduced their per capita daily food expenditures between 1997 and 1999. However, it was the reduction in spending by non-poor households that drove this trend. Between 1997 and 1999, the non-poor households in the sample reduced their food expenditures by more than 16 percent in real terms. It is likely that these reductions came from cutting back on higher priced food items.

By contrast, the poor households in the sample did not reduce their expenditures. In fact, the gain score results indicated that poor households who had received credit from ACP/Mibanco increased their spending significantly more than did the poor households who did not receive credit. The ANCOVA analysis for the total sample provides no indication that microcredit has an impact on food expenditures among the households in the sample. Among poor households, however, where there might be a link between daily food expenditures and the ability to meet basic nutritional needs, there was limited evidence that there may be a small positive impact of microcredit on per capita food expenditures.

## **F. Coping with Shocks**

Risk is a fact of life for Lima's microentrepreneurs. Crime, illness, death, divorce, job loss, and sudden business reversals are just some of the shocks that can have negative financial impacts on households and their enterprises. Given the real possibility of exposure to one or more of these and other events, households often adopt economic strategies which seek to reduce exposure to risk, ensure that the household has adequate resources to cope with a loss, or both.

Risk reduction (*ex ante*) strategies can include the selection of low-risk (often less-profitable) activities, diversification of activities, or a build-up of resources that can be used in the event of a crisis. In the earlier discussion of income diversification, we found that the poor households in the sample do attempt to diversify their sources of income. Coping (*ex post*) strategies, employed once a shock to the household economy has occurred, may have different short- and long-term effects on a household's livelihood, depending on the degree to which they drain resources. In this section, we focus on the incidence of shocks and the coping strategies that households use to deal with shocks once they have occurred.

### *F.1. Measuring Shocks and Coping Strategies*

To conduct the analysis, it was necessary to first determine how many households had experienced shocks with financial repercussions. Shocks were defined as any unexpected or unforeseen event that occurred in the previous two years and that had significant negative economic or financial repercussions for the household. So, in the 1997 survey, respondents were asked to consider the 1995-1997 period as their reference point. In the 1999 survey, the reference point was the 1997-1999 period. Respondents were provided with a list of possible shocks (see table 6.7 for the response categories) and asked if their household had experienced any of these shocks. If the respondents reported multiple shocks, they were asked to indicate which one had been the most harmful to the household.

The data analysis revealed that the incidence of shocks increased between the two rounds of the survey (table 6.6). For the period between 1995 and 1997, a total of 229 households reported experiencing at least one shock. This was 44 percent of the households in the sample. During the period between 1997 and 1999, the number of households experiencing at least one shock rose to some 294 households, representing 57 percent of the sample. There was a significant increase in the incidence of shocks for all three comparison groups, which is consistent with the negative economic climate during this period.

Table 6.6. Percentage of Households Experiencing Financial Shocks

	Total Sample (n=518)	Treatment Group (n=305)	Control Group (n=175)	New Entrant Group (n=38)
Experienced a Shock in 1995-1997	44	50	36 <sup>1</sup>	39
Experienced a Shock in 1997-1999	57 <sup>2</sup>	57 <sup>2</sup>	55 <sup>3</sup>	63 <sup>2</sup>

<sup>1</sup> Significantly different from the treatment group at  $p < .01$ .

<sup>2</sup> Significantly different from the 1997 average at  $p < .01$ .

<sup>3</sup> Significantly different from the 1997 average at  $p < .05$ .

To determine which groups were more likely to experience shocks, we analyzed the occurrence of shocks by gender, poverty level, enterprise sector, and client status. The frequency of experiencing shocks was not related to the gender or poverty level of the respondent. However, the results indicated that households with enterprises in the industrial sector were somewhat more likely to suffer shocks.

An interesting finding is that shocks were more frequently experienced by those who received microcredit. The treatment group experienced shocks at a significantly higher rate than the control group in the 1995-1997 period. While the new entrant group and the control group reported a similar number of shocks in 1997 (when the “new entrants” had not yet received a loan), by 1999 the new entrant group reported a significantly higher incidence of shocks. This evidence suggests that those who receive microcredit are also more likely to experience shocks. What is not clear, however, is the order of events: Are people who borrow more likely to

experience shocks because they have debts, or are the people who experience shocks more likely to subsequently borrow?

Table 6.7. Most Serious Shocks Experienced in Previous Two Years

Type of Shock	1995-1997 (Percent)	1997-1999 (Percent)
Robbery	33	22
Serious Illness	27	19
Reduction or Loss of Income	17	35
Job Loss	7	5
Death of Non-Income Earner	5	4
Death of Income Earner	2	2
Other	9	13
TOTAL	100	100

The specific types of shocks reported by the households as being the most serious shock over the two periods are listed in table 6.7, along with their frequency of occurrence. In 1997, robbery was the most frequently reported shock, followed closely by serious illnesses within the household. By 1999, more households reported that sudden (unexpected) drops in income as their most serious shock over the previous two years. This is probably microenterprise income, since job loss is listed separately. All types of shocks that households reported as having serious financial repercussions were treated in an equivalent way in the analysis.

The next step was to determine what actions households took in response to these shocks. The most frequent responses to a shock were to borrow money, use savings, reduce household expenditures, or work longer hours. Only a small percentage of households responded to shocks by selling, pawning, or renting out productive fixed assets. These assets consisted primarily of appliances such as stoves, refrigerators, and televisions, which might be considered either productive assets or consumer durables, depending on their use at the time. Coping strategies that reduce the level of the household's productive assets are classified as harmful (or "stage II") strategies because they have the potential for causing long-term productivity losses for the household. The analysis in this section is designed to determine whether microcredit has an impact on households' use of these asset-reducing coping strategies.

## **F.2. Changes in Coping Strategies**

The analysis of changes in coping strategies was based on data from the 144 households that experienced shocks in both periods: 95 households in the treatment group, 40 in the control group, and 9 in the new entrant group. Because the number of households in the new entrant group reporting shocks in both periods was so low, it was not possible to make meaningful statistical comparisons between the new entrant and control groups.



Table 6.8. Percentage of Households Using Asset-Reducing Strategies to Cope with Financial Shocks, for All Households and by Poverty Level (1995-1997 and 1997-1999)

□	All Households (n=144)		Poor Households (n=42)	
	1995-1997	1997-1999	1995-1997	1997-1999
Total Sample	3	8 <sup>1</sup>	7	12
Treatment Group	3	11 <sup>2</sup>	8	20 <sup>1</sup>
Control Group	5	2	8	0

<sup>1</sup> Significantly different from the 1997 average at  $p < .10$ .

<sup>2</sup> Significantly different from the 1997 average at  $p < .01$ .

While the percentage of households in the control group that used asset-reducing strategies to cope with financial shocks changed little between 1997 and 1999, the percentage of households in the treatment group to use these strategies increased significantly from three percent to eleven percent (table 6.8). Among poor households, the increase in the use of asset-reducing strategies was even more dramatic. Approximately one-fifth of poor households in the treatment group who experienced shocks in both periods used asset-reducing coping strategies in response to shocks in the second period. The gain score results indicate that treatment group households were more likely than the control group to move toward asset-reducing strategies between the two survey periods ( $p < .10$ ).

Two conclusions can be drawn from these descriptive results. First, asset-reducing strategies are infrequently used among households in the sample. Second, households receiving microcredit increased their reliance on asset-reducing coping strategies during the period between 1997 and 1999. Perhaps borrowers did not have as much flexibility in dealing with shocks, since they were already obligated to make fixed loan payments on a frequent basis. Borrowers may have turned to asset liquidation because frequent loan payments already placed a relatively high and non-negotiable claim on their cash flow.

### **F.3. Impacts on Coping Strategies**

The impact results from the ANCOVA analysis indicate that microcredit may have had a negative impact on borrower households in that it increased their reliance on asset-reducing strategies to deal with shocks (table H-6).<sup>70</sup> For the larger sample, which included both poor and non-poor households, there was some evidence of a negative impact of microcredit on the treatment group ( $p < .10$ ). For two households with similar income levels that faced shocks in both 1997 and 1999, the household in the treatment group was estimated to be about nine percent more likely to cope with the second (1999) shock by liquidating an asset than was the household in the control group.

Among poor households, the ANCOVA results also indicate a possible negative impact of microcredit in that it leads to the use of asset-reducing coping strategies. The estimated

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<sup>70</sup> Unfortunately, the ANCOVA analysis was hindered by small sample sizes for households experiencing shocks in both periods. As a result, only comparisons between the treatment and control groups could be made.



magnitude of the negative impact is greater among poor households than it is for the sample as a whole. Among poor households with similar income levels in the treatment and control groups who faced shocks in both 1997 and 1999, the households in the treatment group were estimated to be 22 percent more likely to liquidate assets in response to the 1999 shock than were the households in the control group ( $p < .10$ ).

#### **F.4. Coping with Household Financial Crises**

Only three of the case study households had experienced crises severe enough to merit extraordinary coping strategies. Nevertheless, their experiences are illustrative of how financial shocks occur and the variety of strategies that households use to deal with them. In these examples, one household coped by liquidating fixed assets while another contemplated the liquidation of assets, but chose not to do so.

##### ***F.4.a. Accident***

**Ana's** (case A) husband broke his arm in May 1999. Under normal circumstances, this incident might have been considered a minor inconvenience. However, since the household had such a high level of debt, the injury triggered a major financial crisis.

Before Ana's husband was injured, the household had taken several large loans from different sources in order to finance major housing improvements. To earn enough money to repay these loans, Ana's husband drove a taxi at night in addition to his day job with the military. When he was injured, his doctor ordered him not to drive the taxi while he healed. He did not have a choice, however, because the family depended on income from the taxi to service the debts. So, against the doctor's orders, he drove using only one arm to both steer and shift: "He tried to work anyway" said Ana, "... until his arm swelled up. Even though the doctor told him that he had to have absolute rest, he had to work anyway because we have so many debts."

In order to cope with this crisis, they borrowed money from her husband's brother; first S/1,400, and then around S/350 each of the two following months. These loans allowed the household to cover loan payments while Ana's husband could not drive the taxi. In addition, Ana's sons helped sometimes by working as bus attendants, and the household reduced expenditures to a minimum. Now that her husband's arm has healed and he is driving the taxi again, they are catching up. They have repaid one loan but are still paying several others.

This crisis nearly spurred them to liquidate assets because Ana's husband had pressured her to sell a piece of property in order pay their debts. She opposed this plan because she would rather keep the property so that they might improve it and rent it in the future. By convincing her husband to borrow from a family member instead, they avoided asset-reducing coping strategies. Even though the alternative was to take on yet another debt, she was unwilling to part with an asset that she viewed as a future income source.

It is important to note that the pressure to make loan payments turned what under other circumstances might have been considered an unfortunate occurrence into a crisis. The amount of debt that the household had taken on was at the limits of their repayment capacity. Since they

had no cushion or plan in place to deal with income fluctuations, the loss of one part-time income source made it impossible for Ana and her husband to keep up with payments without borrowing more money.

#### ***F.4.b. Illness and divorce***

Unlike Ana, who was able to avoid an asset-reducing coping strategy by borrowing, **Pepa** (case C) had to sell her freezer and pawn her washing machine in order to raise working capital after the dual crises of illness and separation from her husband depleted her reserves.

Soon after starting a mobile clothing business with loans from ACP/Mibanco, Pepa became pregnant. Realizing that she would not be able to sell clothes door-to-door any longer, she used a loan to purchase a small metal kiosk and began selling gifts, house wares, and school supplies in a nearby market. She hoped that this new business would allow her to continue to work while she cared for her new baby. Disaster struck, however, when her delivery was complicated. A cesarean-section and several operations and infections later, she returned to work exhausted and without capital.

The second shock was the loss of borrowing privileges. When she turned to ACP/Mibanco for a loan to recapitalize her businesses, her application was denied because her husband had taken a loan while she was ill and had not made the payments. When she confronted him, she learned that he had closed his business. Though she did not state it explicitly, she strongly implied that the closed business, combined with the problem with ACP/Mibanco, led to a third shock -- separation from her husband.

The beginning of the school year was approaching (a time of brisk business for the sale of school supplies), and Pepa needed working capital to stock her kiosk. Having no other options, she sold her family's freezer for around S/2,000 and pawned a washing machine for S/400. With this money, she bought inventory and reopened her kiosk.

Since that time, Pepa has rebuilt her original two businesses and diversified into costume rental, cosmetics sales, and hair styling. This diversification has stabilized the household economy, but she has not been able to regain the assets that she sold and pawned. By the time she had saved enough money to buy back her washing machine (which had never been used because they did not have a water connection), the person to whom she had pawned it had already sold it.

#### ***F.4.c. Forced relocation***

**Dora's** (case G) household experienced a financial shock as a result of a forced relocation and subsequent mismanagement of the family's clothing business by her eldest son, Carlos. The crisis period began just prior to Father's Day, a period of brisk clothing sales. Dora had taken a large loan to purchase sufficient inventory for the holiday. That same day municipal authorities forced them to move from a busy thoroughfare to a hidden side street where customer traffic was virtually non-existent. Carlos became frustrated, and in the following weeks he often did not even bother to open the store, but instead ran around with his friends, spending the loan money.

Revenue fell, and the store no longer provided enough to both purchase merchandise and repay the loan, forcing Dora and her husband to pay the loan from their own incomes.

This shock had a major impact on the household. While she and her husband repaid the loan from their meager earnings, Dora ceased to invest in housing materials, reduced other household expenditures, and no longer purchased new inventory for the clothing stall. Once they had paid the loan, she also drastically reduced the amount that she would borrow from ACP/Mibanco, from around S/2,000 to S/300, in order to protect herself:

I took out a loan for Fathers' Day, to stock up. On that very day they relocated us, and [my son Carlos] got stuck with a place that was hidden, where customers didn't enter, that's what happened. But he didn't sell either, he didn't give me [money] and I had to pay out of my pocket. Even though we had to depend on my husband's salary, we had to keep up with the loan, to keep a good credit rating. . . . We finally paid the loan. So as not to stop borrowing, I started to take out smaller loans; five hundred, four hundred, three hundred . . .

By the time Carlos eventually stepped down as manager, the enterprise's inventory was nearly depleted and Dora had stopped taking loans altogether. As a result of the crisis, Dora almost lost her business. Fortunately, she was finally able to move her enterprise to a stall in a formal market, and her two younger sons have stepped in and built the business back up to the point that Dora has begun to borrow again. She now plans to take over the business herself in the near future.

The case study examples illustrate how crises occur and how informants cope with them. Each informant responded to financial shocks in accordance with the severity of the shock and the resources at her disposal. After her illness, loss of borrowing privileges, and separation from her husband, Pepa had no alternative but to sell her freezer to raise capital. Dora allowed her clothing business to languish and stopped borrowing until she could resolve the situation with her son and relocate the enterprise. Though Ana narrowly managed to avoid selling a piece of property by borrowing from a family member, her case suggests that high levels of debt can actually aggravate a shock, turning an unfortunate circumstance into a serious financial crisis.

### **F.5. Summary**

Because of the downturn in the economic environment, households reported more financial shocks in the 1997-1999 period than in the 1995-1997 period. While robberies had been the most frequently reported type of shock in the earlier period, loss of income became more prevalent between 1997 and 1999. The data indicate that households that received microcredit were more likely to experience financial shocks. It is especially interesting that the new entrant group had a similar incidence of shocks as the control group for 1995-1997, but once they received microcredit, their incidence of shock in 1997-1999 more closely resembled that of the treatment group.

The use of asset-reducing strategies is not common among the households in the sample. However, when shocks begin to occur more frequently, as they did between 1997 and 1999,

those households that received microcredit were more likely to cope with shocks by reducing productive assets. In other words, the ANCOVA results provide some evidence that microcredit may have a negative impact on households' coping strategies.

The magnitude of this negative impact on coping strategies was even greater among the poor households in the treatment group. With already low income levels, they have fewer options for coping with the shock while continuing to make payments on the loan. The liquidation of a productive asset may be one of the few options they have for protecting their credit record. Case study evidence supports these findings, suggesting that pressure to make loan payments can turn what might ordinarily be a minor problem into a financial crisis if a household does not have sufficient reserves.

## **G. Intergenerational Launching**

For much of the past decade, formal sector wage employment in Lima has been a scarce and sometimes unattractive employment option. Years of economic stagnation reduced demand for private sector labor. At the same time, structural adjustment programs, put in place to stabilize the economy, further reduced the demand for labor by cutting public sector jobs drastically. With labor supply far outstripping demand, the wage work that remained often paid little for long hours. Within this environment, the relative attractiveness of independent entrepreneurship grew, spurring rapid expansion of Lima's microenterprise sector. Though the economy has improved and demand for labor in the formal private sector has grown, microenterprises still represent a comparatively attractive employment option.

Intergenerational launching is the process whereby microenterprise owners "launch" their children into entrepreneurial occupations as an alternative to scarce formal sector employment. Intergenerational launching is motivated by a parent's desire to provide children with future economic opportunities as they come of age. The parent's original enterprise serves as the "launch-pad" microenterprise. The revenues and access to capital of the launch-pad enterprise are used to pay the start-up costs of the new enterprise that is eventually managed by the grown child.<sup>71</sup>

### **INTERGENERATIONAL LAUNCHING AND CHILDREN'S WORK IN MICROENTERPRISES**

Using cross-sectional data from 701 households in the 1997 survey to estimate linear regression and logit models, Matthews (2000) found that

- children in households that are above the poverty line work more hours in their household's microenterprises, and
- households that received ACP/Mibanco credit are more likely to have successfully launched a dependent into a separate microenterprise.

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<sup>71</sup> For additional information on the concept of international launching and empirical evidence, see Dunn (1997) and Matthews (2000).

### **G.1. Measuring Intergenerational Launching**

For this analysis, intergenerational launching was measured in terms of the number of households with resident children (of any age) or other dependent minors who were reported to be managers of a microenterprise. There were problems with this measurement approach, as it only captured those who were still considered members of the household. Children who had been launched in separate enterprises and had subsequently left the respondents' households were not counted. Because of this, the lifetime incidence of intergenerational launching is probably under reported in the data. Another problem with the measure used was that the same dependent managing the same enterprise in both 1997 and 1999 would have been counted as a launch in both years. As a way of dealing with these data problems, two alternative models in addition to ANCOVA were estimated.

### **G.2. Changes in Intergenerational Launching**

The percentage of households that report a child or dependent managing an enterprise is low, averaging only 13 percent of households in 1999. As indicated in table 6.9, there was a significant increase in the incidence of intergenerational launching between 1997 and 1999 for the control group, resulting in a gain score for intergenerational launching for the control group that was significantly higher than for the new entrant group ( $p < .10$ ). However, it should be noted that the level of intergenerational launching reported by the control group in 1997 was relatively low. In general, the percentages reported in table 6.9 should be interpreted with caution, because it is not clear how many of the dependents managing enterprises in 1997 were still members of the respondent households in 1999.

Table 6.9. Percentage of Households with Dependents Managing Microenterprises (1997 and 1999)

	1997	1999
Total Sample	9	13
Treatment Group	12	15
Control Group	5	11 <sup>1</sup>
New Entrant Group	12	14

<sup>1</sup> Significantly different from the 1997 percentage at  $p < .10$ .

### **G.3. Impacts on Intergenerational Launching**

Three alternative models were estimated in order to investigate the impact of microcredit on intergenerational launching. The first model was the same ANCOVA approach that was used to test the other impact hypotheses. The results of the ANCOVA analysis do not provide any evidence that microcredit has an impact on the incidence of intergenerational launching (table H-7). There is a conceptual problem with using the ANCOVA approach on intergenerational launching, however, because intergenerational launching occurs only a few times within the long-term context of the household life cycle. In other words, intergenerational launching, if it occurs, happens only once with each child as that child nears adulthood. In

addition, a child who is launched in an earlier period may no longer be defined as a member of the household for subsequent survey rounds.

An alternative approach used to estimate the impact of microcredit on intergenerational launching was to conduct a probit analysis. For this analysis, the dependent variable indicated whether or not the household had ever reported a launch (in 1997 and/or 1999), and one of the independent variables indicated whether or not the household was a member of the treatment group. The results of the probit analysis indicate that microcredit may have a positive impact on intergenerational launching (table H-7). Among households with similar levels of income, enterprise fixed assets, and educational expenditures, households in the treatment group were estimated to be 62 percent more likely to have reported the launch of a child or minor dependent ( $p < .01$ ). Among the moderating variables included in the analysis, it is interesting to note that, households in which a woman was the manager of the primary enterprise were estimated to be one-third more likely to report a launch than households in which a man managed the primary enterprise.

Finally, the third model that was estimated was also a probit model with intergenerational launching as a binary dependent variable. Instead of a binary treatment variable, this third model included the number of years in the ACP/Mibanco program as an independent variable. The results suggest that intergenerational launching is positively associated with the amount of time in the program ( $p < .01$ , table H-7). These results are consistent with the other probit results, indicating a possible positive impact of microcredit on the incidence of intergenerational launching.

#### **G.4. Microenterprise Employment as a Career Path for Household Members**

For the case study informants and their families, microenterprises have played varied roles and generated many benefits. They have provided a viable economic option for informants and family members who were forced from their formal sector wage jobs as well as for those who left them voluntarily. For several informants who grew up in entrepreneurial households, starting an enterprise was a natural choice. Others who did not have such training started enterprises for lack of a better option, learning as they went along. Informants' children have benefited from their parents' entrepreneurial orientation. Working alongside their parents, younger children learn responsibility, build a strong work ethic, and gain self-confidence as they acquire skills and contribute to household well-being. Some of those who are older have gone on to start their own enterprises. This section discusses the circumstances under which household members, both adults and their children, become entrepreneurs rather than seek wage work in the formal sector. It also assesses the role of credit in facilitating the process of intergenerational launching.

##### ***G.4.a. Microenterprise as an alternative to wage work***

When **Efraín** (case F) and **Mario (Martina's)** (case M) husband) lost their factory jobs in the late 1980's, microenterprises became the primary source of household income. Efraín, who had no prior entrepreneurial experience, expressed that he had been "left out in the street" with few livelihood options. He was fortunate enough, however, to receive an in-kind severance payment



of kitchenware from his factory, a windfall which undoubtedly influenced both his decision to start an enterprise and the type of business that he chose. With his savings he purchased more merchandise and opened a kitchenware business in an open-air market near his home. At first he built the enterprise by reinvesting revenue, slowly increasing his inventory. He began to borrow from ACP/Mibanco in the early 1990s, and has utilized loans to expand and diversify his business. In the years since, income from his enterprise has enabled him to cover household expenses, allowed him to help his children start their own businesses, and facilitated important housing improvements.

For years, Martina's small, home-based grocery store was only a secondary income source. The salary earned by her husband, Mario, covered both household expenses and investments in housing improvements, allowing her to reinvest nearly all of her revenues in her business. When her husband lost his job, he began to work with her in her enterprise, which became the primary income source overnight. The enterprise has been their salvation, supporting nearly all household consumption. They have even been able to pursue investment activities, building rental rooms that have added a much-needed income source and relieved pressure on the revenues from the store.

**Jorge** (case B) and **Beto (Jacinta's)** (case J) husband) quit their low-paying jobs in order to work in the enterprises that their wives had established. For years, Jorge and Beto had covered the bulk of household expenses from their salaries while their wives built up their enterprises. As real wages slid with the Peruvian economy in the late 1980s and early 1990s, earnings from their wives' enterprises began to cover a larger proportion of household expenditures. Both men finally decided that their work efforts would be better rewarded in the microenterprise sector and joined their wives in their businesses. These decisions have paid off. Jorge and Patricia's store is now the largest and most successful in their neighborhood and a stall that they recently opened in a nearby market has profit potential. With Beto's assistance, Jacinta used the proceeds from the sale of a stall in a small, older market where she had worked for years to establish a more successful stall in a newer, larger market.

#### ***G.4.b. Microenterprise as a familiar path***

For **Dolores** (case E) and **Laura** (case K), who grew up working in their parents' businesses, successful entrepreneurship seems to have come easily. Dolores has worked in enterprises since she was a child:

I have always been involved in business, I grew up in business, first with my parents, and then on my own. I've been in business for practically my whole life. . . . My mother sold ground chiles. Sometimes, when my mother wouldn't go to the stall I would tend it. . . . Afterward I would go to school, and from school I would go back to the stall.

When asked if one is born with entrepreneurial skills or if such things are learned, she replied:

One might be born [with such skills], but it seems to me that it is practice more than anything. One spends so much time [in the business] that one learns what to do and what not to do, you know? You just know.

Given her training, it is not surprising that Dolores chose independent entrepreneurship as her career path. Her choice has served her well. She has turned the small processed meat business that she inherited from her parents into a successful wholesale/retail operation.

Laura had similar entrepreneurial beginnings working at her mother's side. When Laura and her husband participated in the establishment of a squatter settlement, her entrepreneurial training paid off. Since she was obliged to stay at home to assert *de facto* property rights and protect the house from thieves, she decided to open a home-based store. When describing how she decided to open her business, she related that the entrepreneurial skills she had learned in her childhood gave her the confidence to open her store:

I used to work in a factory as a cook's assistant. When we moved here, I had to stay home. I couldn't work any longer. I thought "what am I going to do in the house?" you know, do nothing? So I said to my husband "why not open a store?" Because . . . since I was young . . . my mother sold *anticuchos* (beef heart skewers) and *picarones* (fried sweet potato donuts) at a restaurant, at the school, and in a kiosk. . . . We helped her all the time.

Sometimes I would say to my mother "I want this or that" and she would tell me that there wasn't enough money. I would say "ok, let's work at night." So my mother would go with me just to keep me company, because I was only 12 or 13 years old. There was a restaurant near our house where buses would stop. There in the door of the restaurant I would arrange the fruit, and then I would board the buses with the baskets. That's how I started selling.

Thus, the entrepreneurial skills that Laura learned as a child helped her to turn a potentially negative circumstance--the need to maintain a constant presence at home in order to protect the house and their squatter status--into an opportunity by slowly building a thriving general store.

#### ***G.4.c. Microenterprise as an educational experience***

Much like Dolores and Laura did as children, the children in **Pepa's** (case C) and **Pablo and Bety's** (case D) households are learning valuable lessons while working in their parents' enterprises. Now that Pepa and her husband are separated and income is down, her two eldest daughters have begun to help Pepa to run her businesses, becoming competent entrepreneurs in the process. Pepa related that her eldest daughter, in particular, has learned enough to make a difference:

I needed someone to help me. I couldn't do it alone, with the babies. . . . She started helping me in the market and here at home. She knew that the business is our fountain of life--if there is no business, there is nothing.



Pepa talked about her second daughter going into the business as well. When asked how she felt to have yet another daughter start contributing, she said:

I feel sadness [that they have to work], but also happiness because they are learning to fend for themselves and that's good. . . . One has to suffer in order to be successful, because if everything is easy it is never valued. Now they value everything that they have. Before they didn't. . . . In this manner I'm helping them learn how to work. They should always be able to rely on themselves. If they drink a soda that is a product of their own efforts, it's going to taste better than if someone buys it for them. . . . For me it's a source of pride and a help. I have confidence that when I'm not there, my daughter can manage. I can go out for something we need . . . and bring it. It's a big improvement.

Pepa views her daughters' participation in the enterprises as both a contribution to the household's livelihood and an educational experience which is preparing them for the future. It brings her both pride and peace of mind; pride because her daughters are learning to take on responsibility, and peace of mind because she knows that they can run things in her absence.

Pablo and Bety have a similar outlook on having their children work with them. For them, the enterprise serves as an after-school program, providing their sons with a productive alternative to loitering in the street with aimless friends. For two years, Bety used credit to build up her cassette inventory in hopes of opening a second cassette stall that her children could manage when not in school. At the time of the second round of interviews, the couple was finally preparing to rent a stall for this purpose. It is Bety's hope that they will learn how to work hard and to value themselves, qualities which will help them later in life:

I'm doing this because there is so much corruption in the world. Because when you don't make your children do anything, they run around with their friends, they learn to steal, to be lazy. When you teach them to work, they learn not to depend on you. Nothing is free; one has to know how to defend oneself . . . to learn how to value oneself as well. To learn . . . what it is to work, so that when they have families they know how, so they won't suffer. If one doesn't teach them, they won't know anything. I want them to study, to be something. I don't want them to be like us.

Bety wants her sons to be educated and hard-working, but does not necessarily see entrepreneurship as a potential career path for them. Nor do the family's economic circumstances require that they work in the cassette business. She simply views work in an enterprise as the best way to teach them responsibility and a work ethic, and to keep them out of trouble.

**Dora's** (case G) sons also work in the family's business while they go to school. When her eldest son, Carlos, drove her clothing stall into the ground, her youngest sons took over the business. Dora related that at Carlos' lowest point, when he was mismanaging the enterprise and not giving her money to pay the loans, she told her youngest sons that she would no longer borrow from ACP/Mibanco until things straightened out. They responded by taking control:

I would tell my children: “we have a stall that’s just sitting there. We don’t have capital and your brother doesn’t care.” My sons just looked at me, but not long after that, they came in from playing with their friends saying, “Mom, a neighbor wants to start a *junta* of five *soles* weekly for children, can we join, can you give us five *soles*?” I said, “Of course.” . . . They said, “thanks mom, today is the lottery.” . . . They came back saying that they had received the first number, and they had the money in hand. . . . So one said, “hey, let’s invest this in the stall, I’m going to sell, I will be in charge, and I’m going to give you the earnings [mother].” The other son had drawn the third number, also in advance, so with the two *juntas*, they bought merchandise.

So, with the help of his younger brother, the middle son took over management responsibility for the stall and has been slowly building inventory ever since. Dora is proud of his entrepreneurial abilities, favorably comparing his friendly and jocular sales style to his elder brother’s dour manner. He has shown himself to be a responsible manager, to the point that Dora has begun to take loans again, passing them on to him for him to use in the enterprise.

Though she is proud of his business skills, Dora was also quick to show her pride in her son’s academic achievements as well, relating that he is a good student who will go on to university preparatory school after he finishes secondary school. Like Pablo and Bety, Dora does not necessarily see the enterprise as a livelihood path for her younger sons, but rather a worthwhile activity that both helps them to learn life skills and contributes to the family’s well-being.

#### ***G.4.d. Intergenerational launching***

**Efraín** (case F) and **Patricia** (**Jorge’s** (case B) wife) have used the proceeds from their businesses to help their children establish enterprises of their own. In Efraín’s case, he offered his children support in the form of small loans to help buy supplies or to get through tough times. His eldest son now owns a successful hair salon on a busy neighborhood street. For his daughter, Efraín built a juice stand/snack bar in the front room of his house. From this space she sells refreshments, beauty products, and shoes that she embroiders. Efraín’s assistance has been instrumental in helping his son and daughter to become self-supporting entrepreneurs.

Patricia (case B) has helped her oldest son to establish his own enterprise. Her son has been an entrepreneur since he was young, selling goods as a street vendor since he was fourteen. To help him establish a more stable business, Patricia recently gave him a piece of land on which he has started a small grocery store. Starting with inventory that she gave him from her shelves, he now works with his own capital and is expanding the business:

[Loans] have helped me, and not only here. I have the piece of land that my son uses--that’s money from [this store]. We’ve given him that piece to help him . . . so that he feels free to sell and work as he wishes. . . . He likes business, totally. . . . He has customers, people seek him out. His customers say to me ‘congratulations, you have a son that is worthwhile,’ because he talks with everyone and people like to talk to him.

This [enterprise]--how can I say it--this is the mother of all of the action. I now have the new market stall--money from here. I have [my son's] store--money from here. I bought a piece of land up there [further back in the settlement] . . . money from here . . . and I get by.

Patricia views her own business as a sort of matriarch, nurturing the entrepreneurial activities of other family members. She is proud of her son and happy that she was able to help him to launch his business. She sees loans as having played an important role in her accomplishments.

Three clear patterns which illustrate the value of microenterprises to household livelihoods emerge from case evidence. For informants who lost or quit their jobs in the formal private sector, microenterprises have provided income sufficient to support their households and even make economic progress over the years. For others who grew up helping their entrepreneurial parents in their businesses, entrepreneurship was a natural option that has paid off. Still others view microenterprises as safe havens, classrooms, or even viable livelihood options for their children.

#### **G.5. Summary**

The case study data indicate that existing microenterprises within the household can serve as launch pads for new microenterprises not only for children, but also for spouses. From the stories told by the case study respondents, credit plays a role in the launching. The evidence from the statistical analysis of the survey data also suggest that microcredit may have a positive impact on the launching of children and dependents into entrepreneurial careers. The ability to launch a dependent should be interpreted as a positive effect, because it provides employment options within the context of a weak formal labor market. Unfortunately, the measurement approach used to analyze intergenerational launching was weak and may have led to underreporting of this complex and subtle phenomenon. Additional research is needed in this area to better understand the relationship between existing microenterprises, microcredit, intergenerational launching, loss of formal sector employment, and other relevant variables.

### **H. Summary and Conclusion**

The households in the sample responded in complex ways to an unfavorable economic environment between 1997 and 1999. The impact results suggest that microcredit had both positive and negative impacts over this period. The most important positive impact was on total household income, which was a logical result of the positive impact of microcredit on enterprise net revenue. In several areas, namely investments in housing improvements, expenditures on appliances, and per capita food expenditures, the households in the sample reduced their spending during this difficult time. On the other hand, they increased their investments in enterprise fixed assets and in the education of their children. The main impact findings at the household level are summarized below.

### **H.1. Household Income**

The impact results indicate that microcredit may have had positive impacts on both total household income and income per capita. Between 1997 and 1999, total household income for households in the treatment group increased by US\$1,200 more in real terms than did income for similar households in the control group. On a per capita basis, the estimated size of positive impact was US\$266 per person per year (in real terms). This is an important result, as it indicates that the benefits from increased microenterprise revenues are being translated into higher household incomes rather than being off-set by losses in other income sources.

### **H.2. Diversification of Income Sources**

The impacts of microcredit on diversification may vary both by the poverty level of the households and the amount of time in the program. Among poor households in the sample, those who received microcredit appear to have been better able to maintain their levels of diversification than households without microcredit, who became less diversified over the study period. This is consistent with the idea that poor households seek diversification as a risk-management strategy for ensuring a steady, albeit low, income. By contrast, among the non-poor, microcredit had a negative impact on income diversification among new entrants to the program. That is, non-poor households who were new borrowers maintained their original levels of diversification while similar control group households became more diversified. The results seem consistent with the interpretation that microcredit helped the poor to maintain their desired higher levels of diversification while it helped new entrants who were not poor to maintain their desired higher levels of specialization.

### **H.3. Household Assets**

Three types of household assets are considered in the study: 1) housing investments; 2) household appliances; and 3) combined enterprise fixed assets from all enterprises. The results indicate that spending on housing improvements and household appliances dropped sharply between 1997 and 1999. These drops can probably be attributed to the downturn in the economy, leading households to temporarily delay these expenditures. Within this context, there was no evidence that microcredit had any impacts on either housing investments or the acquisition of household appliances. The results for enterprise fixed assets showed that the value of combined enterprise fixed assets increased over time for the entire sample, but there are no significant differences between groups and no apparent impact of microcredit on this variable.

### **H.4. Spending on Education**

The results indicate that microcredit may have had a negative impact on education spending among new borrowers. The estimated size of this negative impact was about US\$59 per student per year. This reduction in education spending does not imply that children were being removed from school. In fact, school enrollment rates were extremely high. Rather, the reduction in spending by new entrant households probably implied enrollment in lower quality, less expensive schools. Among the treatment group, there was no evidence of any positive or negative impacts of microcredit on the education expenditures. Taken together, these results suggest that investments in education may be temporarily postponed while new entrant

households adjust to the exigent demands of credit repayment and focus their resources on their enterprises.

### **H.5. Spending on Food**

As a group, the households in the sample reduced their per capita daily food expenditures between 1997 and 1999. However, it was a reduction in spending by non-poor households that drove this trend. It is likely that these reductions came from cutting back on higher priced food items. By contrast, the poor households in the sample did not reduce their expenditures. In fact, the poor households who had received credit from ACP/Mibanco increased their spending significantly more than did the poor households who did not receive credit. The results of the ANCOVA analysis provided limited evidence that microcredit may have had a positive impact on food expenditures among poor households. These results were only marginally significant ( $p=.155$ ), and the magnitude of this impact was a relatively small US\$0.10 (ten cents) per person per day.

### **H.6. Coping with Shocks**

The results for shocks and coping strategies are complex. Because of the downturn in the economic environment, there were more shocks reported for the 1997-1999 period than there were for the 1995-1997 period. The data indicate that households that received microcredit were more likely to experience financial shocks. It is especially interesting that the new entrant group had a similar incidence of shocks as the control group for 1995-1997, but once they received microcredit, their incidence of shock in 1997-1999 more closely resembled that of the treatment group.

The use of asset-reducing strategies is not common among the households in the sample. However, when shocks begin to occur more frequently, as they did during the downturn in the economy between 1997 and 1999, those households that received microcredit were more likely to cope with shocks by reducing productive assets. The results of the impact analysis suggest that microcredit has a negative impact on the coping strategies of treatment group households, with the magnitude of the impact being particularly high for poor households. With already low income levels, the poor have fewer options for coping with shocks while continuing to make payments on loans.

### **H.7. Intergenerational Launching**

Intergenerational launching is unique among the impact variables in that it occurs only once or a few times over the life cycle of the household. Because of this, the ANCOVA model was not conceptually adequate and two alternative impact models were estimated in addition to ANCOVA. The ANCOVA results provided no evidence that microcredit has an impact on intergenerational launching. However, the results of the two probit models suggest that there may be a positive impact of microcredit on intergenerational launching. The probit estimates indicate that households in the treatment group were 62 percent more likely to report a launch on one or both of the surveys than households in the control group.

### *Conclusion*

The results at the household level indicate that microcredit may have both positive and negative impacts. While the positive impact on household income is key indicator of improved household welfare, households with microcredit may also be more vulnerable to the shocks and stresses around them. In the next section, we will see that microcredit can sometimes place acute psychological stresses on the individual borrower as well.

## Section 7 – Impacts of Microcredit on Individuals

Understanding the psychological and interpersonal impacts of microcredit on individual borrowers remains an intriguing and multifaceted subject of study. In recent years, much attention has gone to describing how microcredit might lead to increased empowerment of the borrower. In many cases, the focus is on women borrowers and changes in their status within the household and the community. From “the gleam in someone’s eyes,” to the new-found ability to travel and speak in public, to a more equitable distribution of resources between husbands and wives, to the ability to plan and work for a better future, the individual-level changes that might come with microcredit are many and varied.

In this study, participation in a microcredit program is hypothesized to have positive impacts on the lives of the individuals who receive and use the credit. In order to test this hypothesis, we examine four variables related to changes at the level of the individual borrower:

- control over resources and income,
- self-esteem and respect,
- the incidence of personal savings, and
- attitudes and actions regarding the future.

For each of these four variables, we investigate the changes that have occurred between 1997 and 1999 and the relationship between microcredit and these changes. These variables are heavily affected by the cultural context in which they occur, and any changes may be expected to take place slowly over time. For these reasons, and because the measurement of these variables was difficult within the context of a survey, we rely heavily on the case study findings to interpret and augment the statistical findings.

### A. Control Over Resources

Control over the resources within the household reflects the degree to which an individual is able to influence decisions about the allocation of household resources. The focus for this study is on the primary respondent and understanding how the respondent participates in household decisions. Particular attention is placed on analyzing gender differences in the respondent’s control over resources. Gender relations must be understood within the mixed cultural context: while these households are influenced by the *machismo* from the Latin side of their culture, they are also heavily influenced by the Andean cultures from which they immigrated. In the indigenous Quechua and Aymara cultures, husbands and wives are expected to form productive economic partnerships with individual spheres of economic influence, and women have historically tended to be the dominant traders in the market place.

#### A.1. Measuring Control Over Resources

Control over household resources was measured in terms of three variables:

- control over the decision to solicit the ACP/Mibanco loan,

- control over how the loan is used, and
- control over how enterprise revenues are used.

The first two variables relate to the level of control that respondents have over their ACP/Mibanco loans. These data were collected for treatment group respondents only. It is important to note that the lack of a control group precludes impact analyses for these variables. Rather, gender was used as the comparison variable in order to assess changes over time in the relationship between the loan control variables and gender. The third variable measures the control that respondents have over the use of revenue from the primary enterprises that they manage. For all three variables, the level of control over resources is measured in terms of two response categories: 1) whether respondents made these decisions entirely on their own; or 2) whether other household members provided input in making these decisions.

## *A.2. Changes in Control Over Resources*

The changes over time for the three measures of control over resources are reported in table 7.1. There were no statistically significant changes in control over solicitation or use of loans between 1997 and 1999. However, females were more likely than males to control decisions relating to loan solicitation in 1997 ( $p < .10$ ) and more likely to control decisions about loan use in 1999 ( $p < .10$ ). The statistical finding that females have greater control over decision making is consistent with the case study findings (see below). In nearly all of the case study households, the women who participated in the management of enterprises appeared to hold equal or superior decision-making power in terms of financial management decisions.

Table 7.1. Control Over Household Resources (percent making decisions alone)

□	Decision to Solicit Loan		Decision to Use Loan		Decision to Use ME Revenue	
	1997	1999	1997	1999	1997	1999
Total Sample	49	47	47	47	60	52 <sup>1</sup>
Female	54 <sup>2</sup>	50	51	51 <sup>2</sup>	66 <sup>3</sup>	57 <sup>4,5</sup>
Male	42	41	41	40	52	46
Treatment Group	49	47	47	47	58	52 <sup>6</sup>
Control Group	n/a	n/a	n/a	n/a	65	55 <sup>4</sup>
New Entrant Group	n/a	n/a	n/a	n/a	52	45

<sup>1</sup> Significantly different from the 1997 average at  $p < .01$ . <sup>4</sup> Significantly different from the 1997 average at  $p < .05$ .

<sup>2</sup> Significantly different from average for males at  $p < .10$ . <sup>5</sup> Significantly different from average for males at  $p < .05$ .

<sup>3</sup> Significantly different from average for males at  $p < .01$ . <sup>6</sup> Significantly different from the 1997 average at  $p < .10$ .

There was a significant shift toward collaborative decisions on revenue use between 1997 and 1999. The percentage of respondents reporting that they had exclusive control over the use of enterprise revenue declined significantly between 1997 and 1999 for the full sample, for females, and for respondents in both the treatment and control groups (table 7.1). These changes may



have been due to the recessionary economic climate facing respondents over the study period; difficult economic times may induce family members to work and plan more closely together. Despite the movement toward shared decision making, females still exercised sole control over revenue-related decisions more often than men in 1999 ( $p < .05$ ).

### *A.3. Impacts on Control Over Resources*

The ANCOVA results did not provide evidence of microcredit impacts on revenue-related decisions (table I-1).<sup>72</sup> In addition, the only moderating variable that was significantly related to decision making was marital status. This finding, which indicated that married respondents are more likely to consult with other household members on resource-related decisions, is not surprising. Married respondents would naturally be more likely than single respondents to consult with other household members (their spouses) before making important decisions.

### *A.4. Intrahousehold Decision Making*

The case study data indicate that women play an important role in decision-making processes within the household. A majority of female clients seem to have exercised a great deal of decision-making leverage long before becoming clients of ACP/Mibanco. The exception to this pattern was a young woman who started her business only a few months prior to receiving her first credit. Her story provides an example of how credit can influence positive changes in the ability to influence household decisions. This section discusses the decision-making dynamics in case study households in an attempt to gauge changes over time and assess the part played by credit in those changes.

#### *A.4.a. Women as dominant decision makers*

Among the case study participants, several of the women seemed to have played an equal or dominant role in resource-related decisions prior to becoming clients of ACP/Mibanco. **Bety** (case D), for example, has a great deal of input on decisions regarding the use of loans and revenue even though her husband is the named client of ACP/Mibanco. Despite the fact that her husband is the one who is the client, she was able to save entire loans for housing improvements. That she can make the decision to put aside loans that her husband solicits is a clear indicator of decision-making leverage. It appears however, that she enjoyed this leverage within the household prior to their affiliation with ACP/Mibanco.

**Dora** (case G) has been the primary breadwinner of her family since she started selling herbal tea twenty years ago, but has always shared all decisions with her husband. She is proud of their highly cooperative relationship. Nevertheless, she demonstrated her decision making power when she related her plan to have her husband quit his job to run her tea stand so that she could pursue other activities. **Ana** (case A), whose husband is often stationed outside of Lima, has been the primary decision maker for years, running the household and her enterprise in her husband's absence. **Laura** (case K) has always contributed to the household economically and has always controlled the household finances. Her husband simply complies with her wishes,

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<sup>72</sup> Since questions related to control over loan decisions were only asked of the treatment group, there is no test of the impact.

though he may grumble from time to time. Each of these women plays a central role in household decision-making processes and it is reasonably clear that this position has not changed since they began to receive program credit.

#### ***A.4.b. Women becoming primary providers***

**Patricia** (case B), **Jacinta** (case J), and **Martina** (case M) all manage enterprises which once played a supporting role in the household economy but were thrust into the primary role by circumstance. All three started enterprises in order to supplement the salaries that their husbands earned as factory workers. When their husbands either lost or left their jobs, the households had to turn these one-time “side” businesses into the primary income source. In all of these cases, the women retained their managerial roles in the enterprises and continue to participate actively in resource-related decisions.

Patricia, who is not the named client, started her home-based general store when her husband still worked in a factory. Now she is clearly the manager of the enterprise even though her husband has worked with her since he left his job several years ago. She refers to both the business and the loans as “hers,” and gives the strong impression that she is the primary decision maker. She made it clear that she feels that *she* has controlled the household’s progress through her entrepreneurial efforts since her husband left his job.

When Jacinta’s husband, Beto, left his job, he too turned to his wife’s enterprise. Jacinta related that since he began to work in her enterprise he has gained an appreciation of the hard work involved and a respect for her superior entrepreneurial skills. He now yields to her judgement on enterprise-related decisions.

Martina demonstrated her considerable pull in the household by contrasting her enterprise’s steady income with her husband’s sporadic contributions of income from odd jobs. She emphasized that it has been *her* enterprise that has kept the household going over the years, stating that “if he had continued to work, we would have finished the second floor by now. . . . When he goes out to look for work, sometimes he finds something, sometimes not. Now it is from this business that we cover all of the expenses.”

Martina and Mario appear to have a cooperative relationship. However, it was Martina who began borrowing to stabilize the enterprise when Mario lost his job. It was also she who took the initiative and sought out and used other financial management tools such as ROSCAs and a savings and credit cooperative to further increase her enterprise’s profitability and make housing improvements. It is revenue from her enterprise that meets the bulk of household expenses. Martina is clearly the one who dominates enterprise- and loan-related decisions.

Though their contributions became critical to household well-being almost by default, each of these women attribute at least some of their success to participation in the ACP/Mibanco program. Patricia sees loans as having helped her generate higher profits which in turn allowed her to both support her household and make progress. Jacinta values loans as important tools, but more than loans, she attributes much of her business success to the training that she received from ACP/Mibanco when she was first starting out: “they teach you a lot, they gave us talks.

[How to] do accounting, how to serve and treat clients. [How to] buy, and move money.”<sup>73</sup> The skills that she learned have paid off, helping her to support her household, earn her husband’s respect as an entrepreneur, and become the main decision maker. Martina was able to stabilize and then expand her business using loans, allowing her to become the main contributor to the household. Thus, while each of these women had significant control over resources prior to receiving credit, affiliation with ACP/Mibanco appears to have helped them to solidify their positions in the household economy and increase their decision-making authority over time.

#### *A.4.c. Women Increasing their control over resources*

**Pepa’s** (case C) story mirrors the hypothesized pattern that program participation leads to increases in intrahousehold control over resources. When she first started her home-based school supplies store, Pepa depended on the meager capital that her husband would give her. When she considered borrowing from ACP/Mibanco, he opposed the idea, stating that he was providing her with the capital she needed. Tired of hounding him for funds, she persisted until he capitulated. “I started with just a little [credit], but *I* managed *my* business, *I* managed [the loan], and *I* paid it.” With that and subsequent loans she started a profitable clothing business to complement earnings from the school supplies shop. With credit as a catalyst, she began to contribute to household income and gained economic independence from her husband. When asked how she felt, having gained control of credit flows, she stated:

The credit was like a faithful husband. For me it was a confidence that I had, because I no longer depended on my husband. Sometimes he would become bitter--he wouldn’t lend me money or he wouldn’t bring my inventory [from central Lima]. I would say “It doesn’t matter, I’ll take a loan” and I would invest my money. I felt more protected, more free, more confident in myself.

When crises hit the household and her husband left her, Pepa’s earlier efforts to gain a measure of economic autonomy paid off. She described the process:

Because if I had not always tried to keep separate what was mine, I would not have been able to count on anything. With everything that I have gone through I would have been worse off, I would not have had any back-up. I feel that I have had back-up. . . . When I would go to buy something, or my husband . . . would give me a little money, the priority was inventory. He would ask me “what have you done with your money?” I did not spend it unwisely, I always invested it. I always said “someday it will serve me,” and it did. . . . When my husband failed me . . . I already had my things put away. I have always taken that precaution.

In these passages, Pepa suggests that credit helped her to build up resources over which she had control and become increasingly independent of her husband. She worked to ensure that her

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<sup>73</sup> In the past, ACP provided business development services and other training to its members. Though Mibanco no longer provides such services, Jacinta is a “very old” client who received such support when she first began borrowing. It is worth noting that she laments that Mibanco no longer helps entrepreneurs in this way, because she and the members of her borrowing group believe that they benefited from the services.

position would not be compromised in the future. It was this preparation that has enabled her to support her family on her own, even after her husband left.

With the exception of Pepa, all of the women who participated in the case study research seem to have played a significant role in resource-related decision making prior to becoming clients of ACP/Mibanco. Whether this dynamic stems from cultural conditions, economic necessity, or a combination of factors is not clear. Nevertheless, evidence suggests that enterprise-related resource decisions are generally either cooperative or dominated by the female partner, even when the male is the named client of ACP/Mibanco.

#### **A.5. Summary**

The analysis of the survey data on control over resources did not provide any evidence of microcredit impacts. However, there was a clear trend toward greater cooperation among household members on decisions relating to the use of enterprise revenue. This movement toward cooperative decision making was evident across all treatment categories. This may have been due to the difficult economic climate, a factor that seems to affect all groups, regardless of whether they use credit or not. It is interesting to note that, despite the movement toward shared decision making, females continued to display a greater tendency to make revenue-related decisions alone.

The case study data help to support the conclusion that unfavorable economic conditions lead to increased intrahousehold cooperation. This was particularly true for those households in which the husband began to work in the wife's enterprise after losing or leaving his job. In each of those households, the husband had been a full-time worker whose salary had supported the household while the wife managed an enterprise as a means of earning extra income. When the husbands joined their wives' enterprises, the couples were forced to develop more cooperative relationships, sharing decisions on solicitation and use of loans and use of revenue. The process through which these households experienced changes in decision-making dynamics is illustrative: they began to work together in order to face challenges brought on by adverse economic conditions.

The results of both the quantitative and qualitative analysis point to a conclusion that is counter to the conventional notion that women are less likely than men to exercise control over key household resources. These results present a very different picture, suggesting that in entrepreneurial households in Lima, Peru, women play a significant, or even dominant, role in resource-related decision making. Some of the forces behind this unconventional finding are the indigenous cultural background of women as traders and the macroeconomic changes causing men to lose their formal-sector employment.

### **B. Self-Esteem and Respect from Others**

Microcredit is hypothesized to have a positive impact on the self-esteem of borrowers. The hypothesized chain of events begins with clients using credit to improve their businesses, thereby increasing their contribution to the material welfare of their households and communities. In addition, the need to manage the credit may lead some entrepreneurs to become better managers

of their microenterprise resources. As clients perceive these positive changes, their self-esteem may increase. This higher level of self-esteem is demonstrated by an increased sense of satisfaction with one's own accomplishments and increased confidence in dealing with others.

### **B.1. Measuring Self-Esteem**

Two variables were used to measure changes in self-esteem. The first focuses on the way respondents perceive the importance of their own economic contributions to their households. The other variable focuses on respondents' perception of how other adults in the household value the respondents' contributions. For the first variable, respondents were asked to rank the importance of their economic contribution to the household. The second variable asked respondents to rank the value that other adults in the household place on their contributions. For both variables, four response categories were used. One can be characterized as a strongly positive response, one as a weakly positive response, and two as negative responses.

Nearly all the survey responses were either strongly or weakly positive, indicating that the measures used may not have been sufficiently sensitive to gauge changes in self-esteem. To counter the weakness of the measure, the variables were recategorized. The impact variable used in the statistical analysis consisted of only two categories: 1) a strongly positive response and 2) other responses, which included the weakly positive response and both negative responses. Even with these categories, only a small percentage of respondents provided a response that was not strongly positive.

### **B.2. Changes in Self-Esteem and Respect from Others**

A comparison of responses from 1997 and 1999 shows that, for the sample as a whole, the percentage of respondents reporting that they always feel that their contributions to their households are important rose significantly over the study period (table 7.2). This rise was driven by significant increases within the control group ( $p < .01$ ).

Table 7.2. Self-Esteem and Respect (percent reporting a strongly positive response)

	Importance of Contribution		Other Adults Value Contribution	
	1997	1999	1997	1999
Total Sample	95	98 <sup>1</sup>	88	88
Female	94	98	85	85
Male	96	98	92	91
Treatment Group	96	97	92	88 <sup>2</sup>
Control Group	93	99 <sup>3</sup>	82	89 <sup>4</sup>
New Entrant Group	97	100	93	79 <sup>5</sup>

<sup>1</sup> Significantly different from the 1997 average at  $p < .10$ . <sup>4</sup> Significantly different from the 1997 average at  $p = .118$

<sup>2</sup> Significantly different from the 1997 average at  $p = .171$  <sup>5</sup> Significantly different from the 1997 average at  $p = .103$

<sup>3</sup> Significantly different from the 1997 average at  $p < .01$ .

Changes between 1997 and 1999 in respondents' perceptions of how others value their contributions were only marginally significant, but pointed to an interesting trend (table 7.2). The percentage of treatment group respondents who reported that their contributions were valued by other adults in their households fell from 92 percent in 1997 to 88 percent in 1999 ( $p=.171$ ). The measures of respect for new entrant group dropped even more, from 93 percent to 79 percent ( $p=.103$ ). The control group, on the other hand, moved in the opposite direction, increasing from 82 percent to 89 percent ( $p=.118$ ). The gain score analysis further highlighted this movement in opposite directions, indicating significantly higher gain scores for the control group than for the treatment group ( $p<.05$ ) and the new entrant group ( $p<.05$ ).

In summary, nearly all respondents from all groups feel strongly that their contributions are important to their households. However, the percentage of treatment group respondents who responded positively remained relatively static over the study period, while the percentage of control group respondents affirming the importance of their contributions rose significantly. In terms of their perceptions of how others valued their contributions, the percentage of strongly positive responses declined over the study period for those who received credit and rose for those who did not.

### **B.3. Impacts on Self-Esteem and Respect from Others**

The results of the ANCOVA analysis provide limited evidence that participation in the microcredit program may have a negative impact on the way the treatment group respondents feel about the importance of their economic contributions to their households. Though the result is only marginally significant ( $p=.110$ ), it suggests that, for treatment and control group respondents who had similar responses and similar gender and marital characteristics in 1997, those from the control group would be more likely to have had a positive change in their response by 1999 (table I-2). In other words, the control group respondents moved from a high rate of strongly positive responses to a very high rate over the two years of the study while the treatment group respondents simply maintained a very high rate of strongly positive responses. Thus, though the ANCOVA results could be interpreted as evidence of a negative impact, in reality it may not be a very meaningful result, both because of the direction of the changes and because of the method of measurement.

Results for the second variable, the perception of how others value respondents' contributions, did not reveal evidence of impacts for the treatment group. In other words, treatment respondents and control respondents who gave similar responses and had similar gender and marital characteristics in 1997 did not differ in their responses for 1999.

For new clients of ACP/Mibanco, there was no measurable impact on the way respondents feel about the importance of their economic contributions to their households. For the second variable, however, marginally significant results suggest that the use of microcredit may have a negative impact on the new entrants' perception of how others value their economic contributions to their households ( $p=.172$ ).



This result must be interpreted very cautiously due to its marginal statistical significance. Nevertheless, it suggests that respondents who are just beginning to use credit feel underappreciated by other adults in their households. One interpretation for this result is that the pressures that come with borrowing lead to strains in interpersonal relationships within the household. When they take a loan, borrowers become accountable to ACP/Mibanco and, in some cases, to peers in their borrowing groups. They must make frequent, sizeable payments on their loans. It is possible that, while new entrants adjust to the demands of borrowing, these factors place added stress on them and cause them to feel that they are shouldering a burden which is not appreciated by other household members. This interpretation might be tenuous, but it does seem consistent with the case study findings (see below).

#### **B.4. Overwhelmed by Credit: The Down Side of Borrowing**

While some of the case study informants have employed credit and other financial tools in a complementary and beneficial manner, others have had negative experiences. Taking a loan entails risk: payments must be made, in full, on time, and at frequent intervals, regardless of a borrower's circumstances. When times are good and income is high enough to cover expenses and loan payments, borrowing is not so difficult. When times are tough, or a household is faced with an inopportune shock, or a debt burden is simply beyond their repayment capacity, keeping up with loan payments can be difficult or impossible. The stress stemming from such situations can have negative impacts on borrowers and their families.

**Ana's** (case A) story is illustrative of debt-related problems. For years, she has used ACP/Mibanco loans almost exclusively for inventory. This practice has helped her to maintain her business while making significant contributions to household well-being. Recently, however, Ana and her husband have used loans from five sources other than ACP/Mibanco in the construction of the second and third floors of their house. They have made significant progress on their house, but with this progress have come negative repercussions:

. . . One feels--how should I say it?--like one can't have the pleasures that one wants, you know? For example, I'd like to go on a trip--I have to deny myself. I'd like to go to the movies--I have to deny myself. I'd like to buy appliances for my house--I have to deny myself. Now, for example, I have a living room, but without furniture. Before [when I didn't use credit] it meant less problems for me. Because even though [the store] wasn't full, I didn't have to pay anywhere . . . I sold and bought, sold and bought, like that, a little bit. Instead of buying boxes, I bought by the dozen.

We're up to our necks because we have to work thinking about repaying [loans] . . . to do all this we have to deprive ourselves of many things. We can't dress well, we can't take our children out to have fun--we deprive ourselves of many things in order to make progress. Sometimes I fight with my husband, I fight with my children, all because every day all we think about is making money to pay our debts. . . . We're not going to take any more loans--we've ended up nervous wrecks because we owe so much.

Credit is helping Ana's family to reach their housing improvement goals, but the pressures associated with loan payments are affecting the household in negative ways, too. Ana feels trapped and unable to do anything fun or buy things that she wants. Sometimes they are short on cash and cannot make loan payments. Her husband wears the same old shirt and same broken shoes to work every day and she washes her only sweater each night so she can wear it the next day. Her oldest son has left home, tired of fighting with his mother. Even as they progress economically, relationships within the family are deteriorating.

**Raymundo** (case H) has also seen the negative side of credit. When he was borrowing only from ACP/Mibanco, he used loans to optimize his selection of inventory between expensive brands of clothing bought on a cash-only basis from the wholesale market and cheap ones purchased on credit from producers. In late 1998, he was approached by credit agents from a formal bank and offered a loan. He accepted because the application process was easy and he thought he could use the loan to both pay off his ACP/Mibanco loan and boost inventory:

To pay one with the other. . . . Since [Banco de] Crédito had these possibilities, this ease . . . my friends here told me about it. I decided to do it. Bam! I took the application. Bam! no problem. Since I had all my papers in order, the stall . . . they gave me [the loan]--to cover [my ACP/Mibanco loan], to stock up . . . sometimes . . . it's more problematic when you owe one, the other--it makes your head swim, and there's no business. For that reason, now I don't want to take [loans], I'd prefer to do *juntas* . . . now that I have experience, I don't want to continue. I'm tense, because the bank doesn't forgive. . . . [When I couldn't pay] we felt tense. It seems, *caramba*, that there is no relaxation, one can't even live, food doesn't taste good . . . can't sleep. One is half-traumatized, you know? For that reason sometimes I felt a little . . . annoyed with my family--with everything.

As did Ana, Raymundo found himself overwhelmed by loans. He finally paid both loans after refinancing them, but his experience has left him with a bad taste in his mouth for borrowing and a tarnished credit record.

The experiences of these two informants likely reflect the experiences of many borrowers. While it is apparent that credit is useful and valued by entrepreneurs, such negative experiences illustrate that borrowing can have negative impacts on households as well. In an uncertain economic environment, the act of taking a loan (signing away future earnings) entails risk. For households that live on the margin, small downturns in revenue can be especially devastating when there are claims on what little income is earned. When households face both the pressure to make payments and maintain quality of life in the household, they are forced to make trade-offs and sacrifices that can create stress and negatively affect family relationships.

### **B.5. Summary**

There were few significant changes in self-esteem detected in the survey data. This may have been due, at least in part, to the lack of sensitivity of the measurement approach. Since the overwhelming majority of responses for all participant groups were strongly positive for all of the variables, changes took place within a small range. Nevertheless, the control group appeared



to experience positive changes in the way they view their contribution to their households and how they perceive others to value those contributions. The treatment and new entrant groups, on the other hand, appeared to stay the same on the first variable while experiencing negative changes in terms of the way other adult household members value their contributions.

The ANCOVA results provide limited evidence that microcredit may have a negative impact on self-esteem. Among new entrants, in particular, the results suggest that taking a new ACP/Mibanco loan may have led to a perception among respondents of a decline in the respect they received from other adults in the household. In addition, the ANCOVA results also suggest a negative impact on self-esteem among the treatment group, but this was primarily due to an increase in self-esteem among the control group. These interpretations are tenuous, however, due to marginal statistical significance and weakness in the measures.

These results seem to be counter to the hypothesis that microcredit contributes to increases in self-esteem. On the contrary, the findings suggest that the use of credit may cause stress in respondents' lives that translates into lower self-esteem. This conclusion is supported by the case study results, which showed that stress caused by the struggle to make payments can have negative impacts on both personal and interpersonal levels.

### **C. Personal Savings**

Microcredit is thought to improve the financial management options available to the household by offering a reliable source of borrowed funds on reasonable terms. The availability of borrowed funds is hypothesized to relieve pressures on savings, allowing the household to maintain or increase savings over time. While it is recognized that households can save in many different ways, in this section the focus is on cash (liquid) savings.

Many residents of Lima do not view financial institutions as safe places in which to keep their savings. In the early 1990s, several commercial banks closed and thousands of people lost much of their savings (Asia-Pacific Economic Cooperation 1998). On the heels of these closures, the failure of a large savings plan (CLAE)<sup>74</sup> claimed the savings of many thousands more (Graham 1998). These and other incidents served to foster general mistrust of savings schemes among Lima's residents. Though reforms undertaken in the early 1990s have helped to stabilize the financial sector in Peru, memories of past instability remain.

Given this history, it is not surprising that the incidence of savings, particularly savings in formal financial institutions, was low for the sample. Though increased confidence in financial institutions was reflected in the growth of bank deposits from US\$3.3 billion in 1991 to US\$12.2 billion in 1997 (Asia-Pacific Economic Cooperation 1998, p. 11), not even 50 percent of entrepreneurs in the sample reported having savings in 1999, down from close to 60 percent in 1997. Of those who do save, few use formal banks, preferring either to keep surplus cash at home or to participate in ROSCAs. It is also important to note that savings can take other forms not measured in the survey, such as housing materials or gold and jewelry.

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<sup>74</sup> The Latin American Center of Business Advice (CLAE) was a savings scheme which defrauded thousands of people of millions of dollars in the early 1990s.

Nevertheless, households in the sample did report many forms of liquid savings. The most frequently reported type of savings is cash saved at home (table 7.3). The second most common type of savings is in ROSCAs, known as *juntas* or *panderos* in Peru.<sup>75</sup> Savings accounts in banks are the third most common type. Other, less popular forms of savings include cooperatives, stock shares, and certificates of deposit.

Table 7.3. Types of Savings Reported by Respondents (n=518)

Type of Savings□	1997		1999	
	Frequency	Percent Reporting Type	Frequency	Percent Reporting Type
Cash at Home	175	34	125	24
ROSCA	82	16	115	22
Bank Account	67	13	30	6
Stock Shares	16	3	4	1
Checking Account	14	3	14	3
Cooperative	6	1	7	1
Other	15	3	8	2
Total Number of Distinct "Accounts"	375	---	303	---

Source: 1997 and 1999 survey data.

Note: Categories are not mutually exclusive as respondents may report more than one type of savings.

### C.1. Measuring Personal Savings

For this study, personal savings were defined as savings that were held in the respondent's name, or savings over which the respondent believed himself or herself to have some control. The savings could be either exclusive or shared, as long as the respondent considered that he or she was an owner of the savings. Savings held by other household members were not considered.

Respondents were asked if they held personal savings in any of the forms listed above. Since it was possible to hold savings in more than one form at a time, multiple responses were recorded if individuals reported more than one type of savings. For the impact analysis, only the presence or absence of savings was measured. That is, respondents who reported one or more types of savings were recorded as having a positive response, while those who did not report any type of savings were recorded as having a negative response.<sup>76</sup>

<sup>75</sup> ROSCA use is likely underreported in this section. In another section of the survey, seven percent of respondents reported ROSCAs as a type of credit (these data are presented in chapter IV, section C.3). Therefore, the true incidence of ROSCA use was probably over 20 percent.

<sup>76</sup> Savings can also be measured in terms of value. Measuring the value of savings is difficult, because respondents may become guarded and suspicious when questioned about how much money they keep in savings.

## C.2. Changes in the Incidence of Personal Savings

There was a significant drop in the incidence of personal savings between 1997 and 1999 (table 7.4). In 1997, 56 percent of households reported some form of savings; by 1999 this proportion had dropped to 48 percent. This drop was led by a sharp decline in the incidence of savings among respondents in the treatment group. Despite this decline, more respondents in the treatment group reported savings than respondents in the control group in both 1997 and 1999.

Table 7.4. Incidence of Personal Savings (percent with savings)

	Total Sample (n=484)		Treatment Group (n=282)		Control Group (n=166)		New Entrant Group (n=36)	
	1997	1999	1997	1999	1997	1999	1997	1999
All	.56	.48 <sup>1</sup>	.62 <sup>2</sup>	.52 <sup>3,4</sup>	.47	.42	.47	.47
Male	.63 <sup>5</sup>	.47	.66	.48 <sup>4</sup>	.63 <sup>6</sup>	.43 <sup>4</sup>	.46	.62
Female	.51	.49	.60	.55	.35	.40	.48	.39

<sup>1</sup> Significantly different from 1997 at  $p < .05$

<sup>4</sup> Significantly different from 1997 at  $p < .01$

<sup>2</sup> Significantly different from control group at  $p < .01$

<sup>5</sup> Significantly different from females at  $p < .05$

<sup>3</sup> Significantly different from control group at  $p < .05$

<sup>6</sup> Significantly different from females at  $p < .01$

These changes may be related to the difficult economic times facing the respondents between 1997 and 1999. It is possible that some households might have liquidated their savings to help cope during periods of economic decline. In the previous section, it was shown that the incidence of financial shocks had increased over the period, with some households using their savings to cope with these added shocks. Moreover, when income and revenue levels are stagnant or falling, households tend to respond by saving less and by using whatever money they have for consumption purposes or to make productive investments.

Since many case study informants, all of them commercial sector entrepreneurs, had reported negative attitudes toward savings (see below), the incidence of savings was analyzed by the sector of primary enterprises. Analysis by sector showed that in 1997, only 54 percent entrepreneurs with commercial sector enterprises reported savings compared to 63 percent of entrepreneurs in other sectors ( $p < .10$ ). By 1999, however, the percentage of respondents reporting savings had dropped for all sectors, and there were no significant differences between sectors.

Analysis by gender indicated that the incidence of savings for men dropped significantly over the study period while the reported incidence for women remained constant (table 7.4). While men were significantly more likely to report savings than women in 1997 ( $p < .05$ ), by 1999 there were no differences in the incidence of savings between the two groups. It is possible that the decreased incidence of savings for men was related to the recessionary economic environment; perhaps savings behavior for males is more responsive to economic conditions than that for females.

### *C.3. Impacts on the Incidence of Personal Savings*

The results of the ANCOVA analysis did not reveal any evidence of microcredit impacts on the incidence of personal savings for either the treatment or new entrant groups (table I-3). The analysis detected a significant relationship between only one moderating variable and the incidence of savings: households that had higher incomes in 1997 also had a greater tendency to have savings in 1999. This result is not surprising because we would expect higher-income households to have more flexibility to allocate funds toward savings. Though the magnitude of this finding is not large, the ANCOVA analysis indicates that a S/10,000 increase in household income is associated with an eight percent increase in the reported incidence of savings ( $p < .01$ ).

### *C.4. Savings as an Unattractive Option for Commercial-Sector Entrepreneurs*

Many of the case study respondents have ambivalent or negative attitudes toward savings. Some view investments in inventory or fixed assets as a more productive use of surplus funds. Others, having lost their savings to bank collapses or seen it dwindle from exorbitant fees, eschew formal savings instruments, choosing instead to use informal instruments or to not save at all.

#### *C.4.a. Investing in inventory for higher returns*

**Jorge and Patricia** (case B), for example, seem to view investments in home improvements and inventory as forms of savings that are superior to a bank account. They feel that their money must be invested in something productive and see formal savings as a waste of capital. When high seasonal sales generate surplus revenues, they save in the form of housing materials. At other times of the year, all excess revenue is reinvested in inventory. As Jorge put it, money should not rest:

As my wife says: “Money shouldn’t be put away.” One must simply put it to work. Everything that we have is used immediately to buy [inventory]. . . . Right now we don’t have any savings . . . everything is invested in merchandise. Banks pay very little interest, so we buy merchandise and we have it here. In case of emergency we can sell it.

Rather than save in a bank account, Jorge and Patricia purchase housing materials or simply invest in enterprise inventory. Their investments in housing materials, such as bricks, are tangible stocks that represent progress toward the eventual improvement of their home. If the prices of materials rise, as they often do, the household is protected against these increases. It may seem odd that the couple would view inventory as a form of savings. Nevertheless, for them, inventory, particularly in the form of relatively non-perishable canned goods and sacks of rice, beans or sugar, represents both an investment in the business and a hedge against possible emergencies. If they are confronted with a financial crisis, they can simply liquidate inventory. If the store is well-stocked, a partial liquidation will not significantly impact profitability.

**Pepa** (case C) has similar feelings about savings. She and her husband were trying to save toward a new roof for their house, but their savings always seemed to go toward pressing

expenses such as medical bills. In addition, when they kept savings in a bank account, the periodic maintenance fees that the bank charged drew their capital down:

We were saving and our goal was to put a roof on the house. When we went to withdraw a small amount to buy something before the baby was born, we found out that the amount of money that we had saved had shrunk. They were charging us two dollars per month to maintain our savings account; we had our money there and we still had to pay the bank. So we said: "It's better to keep the money in the business; at least there it is turning over." We withdrew our savings from the bank and stopped saving. . . . The best savings is our business.

Pepa was finally able to put a roof on her house through a loan from a government agency. She continues to invest any surplus revenue in her business rather than holding cash savings, and she makes payments on her home-improvement loan with enterprise profits.

**Efraín** (case F) saved on a regular basis when he had a salaried job. When he lost his job, he invested that savings in the start-up of his enterprise. Since that time he has saved very little, preferring to invest in merchandise:

Now I have very little savings; all of the money is used for merchandise. Money that comes in is money that is used to invest. . . . [In the past] I could save because I wasn't in business, that's why I was always saving. The thing is that now savings doesn't provide any benefit, because one doesn't earn anything with money that's stashed away. In contrast, if it's invested in merchandise, you sell it and earn more.

Efraín clearly favors investment in inventory over savings. It is important to note that Efraín saved regularly when he drew a steady paycheck and did not have a business. Now that he is an entrepreneur, he views savings as idle capital and sees investment in inventory as a more productive use of liquidity because it generates a profit.

#### ***C.4.b. Mistrust of banks***

**Jacinta** (case J) and **Beto** do not save for two reasons. One, they feel that investments in inventory are more profitable than bank savings. Beto explained:

[We don't save] because you can't [with a business]. You have to save in inventory. It is better to invest than save, because banks pay a pittance on savings and inventory is better.

The second reason that they do not save is that they lost a significant amount of money, first to a monetary devaluation, then to a savings scheme called the CLAE. When Beto left his job, he deposited his US\$25,000 severance pay in the CLAE because it promised high rates of return. Jacinta explained:

I told him, “we have to use this [money] in the business.” But he didn’t want to. He took it to CLAE to save it. [In the CLAE] people saved their money and earned [interest]. That man, who is now in the U.S., Carlos Manrique . . . he was recognized . . . you could save and earn a lot. Everybody here in Lima . . . they sold their houses, their things, in order to earn more money. So [Beto] thought we could live off the interest. We were alright . . . and [Manrique] took [the money]. . . . Now he’s in jail . . . they said that he was defrauding.

The CLAE failed, and Beto lost everything. “If I hadn’t put everything in CLAE,” he said, “I would be alright now. I would be in good shape, selling wholesale/retail.” Low return on bank savings and lack of confidence in the banking system have turned Jacinta and Beto into non-savers.

**Laura** (case K) and her husband have had a similar experience and have similar attitudes about saving. Her husband also lost a large sum of money in the CLAE failure. He now saves some money in US dollars at home. Laura said that her husband saves because the nature of his business, which is not capital intensive, allows him to, but related that he is bitter about his loss and will not even talk about banks.

Laura, on the other hand, would rather invest in inventory:

. . . If you save in a bank, you put your money in a bank and you hardly earn anything. On the contrary--here [in Peru] they charge you. Keeping your money in a bank is like letting it sit around. On the contrary, I invest it and then earn a little something.

#### ***C.4.c. Forced savings***

Though Laura said that she would rather invest than save, she is beginning to save a small amount in a communal bank that has a forced savings component. The bank, which provides her with small loans, requires that she pay one *sol* (about US 30 cents) into savings every week along with her loan payment. Thus, the quantities are so small that she barely notices that she is saving. She is pleased, however, to be accumulating a small fund that she will be able to use someday.

**Martina** (case M) and Mario are saving small amounts in a cooperative that has a forced savings component. Martina joined the cooperative in order to borrow. To qualify for credit, however, she had to save S/300 (about US\$100). So, over the period of a year she paid one *sol* per day until she qualified for her first loan. Once she had a loan, she, like Laura, was required to pay an extra *sol* into savings with each loan payment. Now, after several years of borrowing, she has accumulated nearly S/1000 in savings.

Saving in the cooperative was a big step for them, because they had lost a significant sum years earlier when their bank became insolvent:

We used to have [savings]. We were starting with Mutual Peru, and it closed. [The savings] stayed there, we know nothing. . . . We don't even ask anymore. They closed it from one moment to the next. Now we don't want to use banks, and we don't have anything to put in the bank. The little that there is simply turns over [in the business]. We invest in one thing or another. . . . We're afraid to save. Sometimes I have a little something . . . it's preferable to invest it in other things. . . . We save in our house, because we put a roof on. That's where the savings is.

Since then, Martina and Mario have preferred to either invest in inventory or housing improvements, viewing the latter investment as a form of savings. As with Laura, however, the gradual, small-scale nature of saving in the cooperative has made saving more palatable them.

The negative attitudes toward savings that were expressed by informants are likely shared by many entrepreneurs in Lima. Whether these negative perspectives are due to a desire to maximize the return on surplus cash, a mistrust of banks, high bank fees, the nature of their enterprises, or a combination of factors varies with the individual. It is apparent, however, that the case study informants favor productive investments or investments in home improvements over savings in bank accounts.

### **C.5. Summary**

The ANCOVA results did not provide any evidence to indicate that microcredit has an impact on the incidence of savings. The descriptive results indicated that the incidence of personal savings dropped significantly for the full sample and for the treatment group between 1997 and 1999. Gender was an important determining factor in this drop, with males from both the treatment and control groups showing significant declines in tendency to save. Women in all groups maintained the same propensity to save throughout both periods of the study. In 1997, commercial sector entrepreneurs were significantly less likely to hold savings than were entrepreneurs in other sectors, though there were no significant differences detected in 1999. Evidence from the case studies supports this finding, indicating that commercial-sector entrepreneurs have a distinct aversion to holding financial savings in banks or other liquid forms, preferring instead to invest surplus funds in inventory or housing improvements.

It is likely that the reduction in the incidence of savings was related to the harsh economic climate. When times are lean, households tend to draw down their savings rather than build them up. Interestingly, men appear to save less during bad times, while women report the same incidence of savings regardless of economic conditions. Though the reasons for this shift are not clear, it is possible that male savings behavior is more responsive to prevailing economic conditions.

## **D. Attitudes and Orientation Toward the Future**

The degree to which an individual feels prepared for the future reflects, in part, the perceived stability and growth potential of his or her economic base. The availability of a steady and reliable source of credit may foster a more positive orientation toward the future, since the client



may be better able to formulate and effectively implement proactive financial and economic plans. In this way, the client's perception of the future becomes more positive over time, and the client has a greater sense of security and confidence.

### **D.1. Measuring Changes in Attitudes and Orientation Toward the Future**

Respondents' attitudes and plans for the future were gauged through two questions. The first question asked whether respondents considered themselves to be well prepared or in a good position to face the future. The second question asked whether they were taking specific actions to prepare for the future and, if so, what specific actions they were taking. Since the question about actions taken was open-ended, responses were varied. Nevertheless, many respondents responded similarly, stating that were working more, often in an effort to save money for business or personal needs. Others were in the process of building up their inventory or investing in the infrastructure of their enterprises. Another common response was investment in education, both for themselves and their children.

### **D.2. Changes in Attitudes and Orientation Toward the Future**

In general, the entrepreneurs in the sample feel confident about the future, with about three-quarters reporting that they are in a good position to deal with the future (table 7.5). Respondents from the treatment group were more likely to report confidence about the future than those in the control group in 1999 ( $p < .05$ ). The new entrant group showed the highest levels of optimism. It is interesting to note that respondents in the new entrant group had attitudes similar to the control group in 1997, before receiving microcredit. By 1999, they were significantly more likely to express confidence about the future than the control group respondents ( $p < .01$ ).

In terms of actions taken to prepare for the future, similar percentages of all groups reported that they were taking specific actions in 1999. This represents a shift in the relationship between the treatment and control groups. In 1997, treatment group respondents were significantly more likely to report that they were taking actions to prepare for the future than were control group respondents ( $p < .01$ ) (table 7.5). By 1999, this gap had closed. The gain score analysis supports this finding. The control group had a significantly higher gain score than the treatment group in terms of actions taken to prepare for the future ( $p < .10$ ).



Table 7.5. Attitudes and Orientation Toward the Future (percent responding positively)

□	Feelings of Preparedness		Actions Being Taken to Prepare	
	1997	1999	1997	1999
Total Sample	78	74	74	81 <sup>1</sup>
Female	79	74	73	81
Male	77	72	76	82
Treatment Group	80	76 <sup>2</sup>	81 <sup>3</sup>	83
Control Group	75	67 <sup>1</sup>	66	79 <sup>4</sup>
New Entrant Group	76	86 <sup>3</sup>	69	79

<sup>1</sup> Significantly different from the 1997 average at  $p < .10$ .

<sup>2</sup> Significantly different from the average for the control group at  $p < .05$ .

<sup>3</sup> Significantly different from the average for the control group at  $p < .01$ .

<sup>4</sup> Significantly different from the 1997 average at  $p < .01$ .

These results make sense, particularly given the difficult economic climate between the surveys. The respondents in the treatment group, who are generally better off financially, remain optimistic and proactive in both years, hence the lack of significant changes. For respondents in the control group, on the other hand, the recessionary economy may have induced lower confidence regarding the future. This uncertainty or lack of confidence, in turn, may have served as a motivating force, spurring control group respondents into taking actions aimed at improving their positions in the future.

### **D.3. Impacts on Attitudes and Orientation Toward the Future**

The results of the ANCOVA analysis of the treatment and control groups suggest that microcredit has positive impacts on entrepreneurs' feelings of preparedness for the future. Given two respondents with similar attitudes in 1997, the same gender, the same number of economically active household members, and same level of income, the respondent who received microcredit was estimated to be eight percent more likely to report feelings of preparedness than the respondent who did not ( $p < .10$ ) (table I-4).

The ANCOVA results for the new entrant and control groups provide even stronger evidence microcredit may have positive impacts on feelings of preparedness for the future. The results suggest that for new entrant and control group respondents with similar characteristics in 1997, new entrant respondents would be 20 percent more likely to report that they feel prepared for the future in 1999 ( $p < .05$ ). There were no measurable impacts of microcredit on actions being taken to prepare for the future either for the treatment group or the new entrant group.

It is possible that this increase in the propensity to express confidence about the future was related to the use of microcredit. Perhaps loans allowed many in the new entrant group to take advantage of opportunities that were not attainable before, thereby improving household financial welfare and leading to greater confidence about the future. On the other hand, it is possible that opportunities other than credit drove the increase in optimism for this group.

Perhaps the opportunity to make profitable investments occurred first, and spurred many in the new entrant group to take loans. Nevertheless, it is still plausible to conclude that microcredit played a role (though perhaps only an indirect one) in buoying feelings of preparedness.

#### **D.4. Moving Forward: Orientation Toward the Future**

For Lima's microentrepreneurs, the last two decades have been marked by economic and political turbulence and an environment of high uncertainty. For many households, particularly those with members who have been forced out of formal sector jobs that they thought they would hold until retirement, or those who have faced recent crises, long-range planning can be difficult. Nevertheless, households often have a proactive, positive orientation toward the future. They focus on increasing their income, stabilizing the household economy, and generally improving household well-being. This section looks at the strategies that case study households employ as they work toward the future, the attitudes that entrepreneurs have about the strategies that they have chosen, and the function of credit as a catalyst for these strategies.

##### ***D.4.a. Housing improvements for a more secure future***

Several of the case study households have plans that center on the eventual completion of housing improvements, particularly rental units, which will increase household income-generating capacity. **Ana's** (case A) hope is that the apartments she is building will provide her and her husband with a steady income that will serve them when they can no longer work:

We work thinking about the future. While we're young we need to take advantage of our strength to the maximum. Once we are old, who's going to look after us? Because you can't place your hopes on your children. Sometimes they help, sometimes they get married and abandon you. . . . Sometimes they don't have anything either; they can't help their parents. Since we look at all the possibilities, we're always thinking about our future.

In addition to the rental units, Ana wants to improve her store, eventually turning it into a sparkling mini-market that will attract a higher-class clientele. She is working toward this goal by slowly purchasing display cases and other items, such as a roll-up door, which will improve the store's appearance and security.

Both housing improvements and the purchase of fixed assets have been greatly facilitated by various forms of credit. Ana and her husband have used loans from several sources to make housing improvements and have made significant progress. They have also purchased fixed assets through store (consumer) credit and plan to use a loan from ACP/Mibanco to purchase the roll-up door. All of these credit-driven accomplishments are moving Ana's household toward increased economic stability in the future.

**Jorge and Patricia** (case B) dream of converting their house into a kind of commercial center. Their hope is to increase the space available on the first floor so that their children might someday open their own businesses there. Jorge explained that he wishes to start a kind of diversified "market" on the first floor of the house:

We're thinking about expanding in the future. My idea is to turn the first floor into a commercial area and use the second floor as a living area. . . . That's my goal; build for my children and afterward if they want to start a business there--you know, give them space here and we can all sell together. In other words, my idea is to establish a kind of market [here on the first floor].

Jorge hopes that as he and his wife grow old, the family will work together. When they are too old to work, he hopes that his daughters will take over their business as well as care for them.

**Martina** and **Mario** (case M) also view investments in their house as the foundation of their future economic well-being and are relying on credit to help them improve it. They are building rental rooms using loans from a cooperative. Mario is considering purchasing furniture on credit so he can convert their large garage space into a restaurant. They dream of someday building a third floor which will serve as a hostel. It is their hope that these actions will provide them with economic security over the long term: "When we reach old age, [the house] will help us. We will have something, we won't suffer." Martina and Mario's house represents their future; as they use both income and credit to improve it and develop its income-generating potential, their long-term economic outlook improves.

**Efraín** (case F) has also placed housing improvements squarely at the center of his household's long-term economic strategy. By using loans to build rooms for rent, he is developing a source of income which will help to pay bills in the near future as well as when he can no longer work. He is also looking to opportunities outside of his home to improve current and future prospects. While he had used parts of his two previous loans to make housing improvements, he planned to use his next ACP/Mibanco loan to open a fixed-location store.

This proactive stance seems to be related to his family reaching a new stage in its life cycle. When his children were dependent on him, nearly all enterprise income was used to maintain the household. Now all of his children work, freeing Efraín to use surplus income for investment purposes rather than to support them. He is getting older, and is acting quickly to improve his position by investing loans and revenue in construction:

. . . Everything that we've done has required an effort. We've given up holidays in order to invest the money. We haven't traveled, we haven't gone anywhere. We have tried to save, even in the smallest ways, so that we can accomplish something. . . . The credit has been a big help. What helps is that one makes payments. You take that money and invest it in something, it generates profit and you make payments. . . . [The loans] are important, because with them I buy merchandise which I then sell. The profit helps me with the improvements, especially now that household expenses are lower. . . . [Without the loans] I couldn't have done it.

Efraín trusts that the sacrifices that he is making in order to increase household income generating capacity will allow him to have more leisure time in the coming years and increased economic security as he and his wife grow older.

#### ***D.4.b. Diversification and enterprise improvement***

Before becoming clients of ACP/Mibanco, **Pablo** and **Bety** (case D) were street vendors. When they moved into the market where they now sell cassettes, they began to use loans to build up their inventory while Pablo drove a taxi to supplement household income. Now they have surplus inventory, and plan to use it to open a second cassette stall in a nearby market which their sons will manage.

Pablo and Bety also view the establishment of a home-based grocery store as key to the household's future because it will provide stable income and will be safer for Pablo than the taxi service. Using ACP/Mibanco loans, they recently installed a concrete roof on their home and converted the front into a store. Pablo now plans to leave the taxi business for the more sedentary role of shopkeeper. They are waiting for their next loan, which they will use to buy inventory for their new grocery store.

Other participants have complex plans that do not involve housing improvements. **Dora** (case G), for example, intends to make big changes in the composition of the household economic portfolio. Tired of breaking her back and boiling her hands at her tea stand, she plans to have her husband quit his job and take over this activity. She will then concentrate on their clothing business so that she can begin to take larger loans and focus on strengthening the enterprise. She also plans to open a stall that she owns in a nearby market from which she will sell chicken.

**Jacinta** (case J), who at 60 is nearing what might be considered retirement age, seems to be just getting started. Like Efraín, her children are out of school and supporting themselves, greatly increasing the income that she has available for investment purposes. She has made the most of her situation, parlaying capital from both the sale of her old stall and several loans into the purchase of a new stall in a bustling market. She is reinvesting all surplus revenue into her business, and plans to purchase the neighboring stall so she can expand the business and build an apartment above the stalls where she and her husband will live.

Despite the difficult economic climate during the period of the study, the case study informants continued to plan and implement strategies meant to improve their economic position and move toward a more secure and stable future. Construction of rental rooms figures prominently in their plans, and even older informants are starting new businesses or improving old ones. All of the informants see credit, from both ACP/Mibanco and other sources, as a catalyst which is helping them to reach their goals at an accelerated pace.

#### **D.5. Summary**

Participation in the microcredit program may lead to positive impacts on attitudes about the future. That these impacts appear to be stronger for the new entrant group suggests that microcredit somehow sparks optimism and increases feelings of security in new clients. When the prevailing economic conditions over the study period are considered, the importance of the implications of these findings is magnified. Microcredit seems to play a role in helping clients to maintain feelings of confidence about the future even in the face of an economic downturn. That clients have maintained such high levels of confidence about the future and proactive stances

toward the future provides some indication that credit boosts clients' feelings of preparedness. On the other hand, it should be recognized that feelings of optimism about the future may have preceded the decision to borrow.

The case studies provide additional evidence that entrepreneurs who receive microcredit are generally upbeat about the future. They use loans to facilitate proactive plans meant to improve their economic positions in the years to come. Loans are used to finance housing improvements, start new businesses, and improve existing businesses. As these plans are realized, the clients feel more secure and better able to face what the future might bring.

## **E. Summary and Conclusion**

The analysis of the individual-level variables provided mixed results in terms of impacts. In some cases, the measures used to detect individual-level impacts were not very sensitive to changes in the variables. Nevertheless, the results suggest that microcredit can have both positive and negative impacts on borrowers. The main impact findings are summarized below.

### **E.1. Control over Resources**

The ANCOVA results did not provide any evidence that microcredit has an impact on resource-related decision making. This may be because all participant groups showed similar increases in cooperative decision making, though females were still more likely to exercise exclusive control over resources than were males. While it is generally believed that women around the world exercise less influence over household and enterprise resources than their husbands, the results of this study, both from the survey and case study evidence, indicate that the female entrepreneurs in the sample are significantly *more* likely to have control over decisions related to loans and enterprise revenue than are their male counterparts. Although this finding is probably related to cultural factors unique to the region, it is important because it challenges conventional wisdom.

### **E.2. Self-Esteem and Respect**

There was some evidence from the ANCOVA results to indicate that the recipients of microcredit place a lower value on their contributions to their households and feel less appreciated by other household members than their control group counterparts. These findings must be interpreted with caution due to marginal statistical significance of the results. The case study evidence supports this finding, indicating that the pressures to make timely payments on loans can cause a strain on household relationships and result in lower levels of self-esteem among members of the treatment group.

### **E.3. Personal Savings**

The analysis of the incidence of personal savings did not reveal any impacts of microcredit. There were significant declines in the reported incidence of personal savings over the study period. Interestingly, nearly all of the decline in the incidence of savings can be attributed to males, whose incidence of savings dropped significantly over the study period while savings rates for females remained constant. This result is, perhaps, related to the recessionary economic

conditions during the study period. It may be that men's savings behavior is more sensitive to exogenous factors than women's.

#### **E.4. Attitudes and Orientation Toward the Future**

Microcredit seems to have a buoying affect on attitudes about the future; a higher proportion of clients than non-clients reported that they felt well-prepared to face the future. For the new entrant group, credit appeared to provide a confidence boost that seemed almost unrealistic given the economic climate. That this group apparently derived such improvements in feelings of preparedness is in stark contrast to results for the control group, who reported steep declines in confidence levels. Although the impact analysis indicated that the increases in feelings of preparedness for the new entrant group may be attributable to microcredit, it is also possible that new entrants simply had more promising business opportunities, which led them to take loans.

#### ***Conclusion***

The results presented in this section indicate that microcredit may result in both positive and negative impacts on individual borrowers. The positive impacts seem to be limited to feelings about the future, with clients appearing to have more confidence in their ability to face whatever might come their way. Though the evidence was weak, microcredit may have negative impacts on client self-esteem which stem, perhaps, from stress relating to the pressure to repay loans. Also important from a policy perspective are findings related to gender. Female entrepreneurs tend to exercise more control over household and enterprise resources and appear to save more consistently than male entrepreneurs. These are both relatively unexpected findings. The implications of these findings will be discussed in more detail in the following section.

## Section 8 – Summary and Implications of Findings

The objective of this evaluation was to assess the impacts of the ACP/Mibanco microcredit program on microenterprises, households, and individual borrowers. The evaluation approach combined qualitative and quantitative data collected over a three-year period to test hypotheses and explore causal relationships at each of these three levels. The results generally confirm that microcredit can be used as a tool for improving the lives of the working poor. However, the results also indicate that there may be some negative impacts of microcredit and that there are limitations to the client-level benefits of this particular type of microfinancial service.

This final section consists of four sections. In the first section, we provide an overview of the impact evaluation findings, discussing how these impacts might be related to amount of time in the program and providing a special summary of the impact findings for households below the poverty line. We also return once more to the case study informants to hear their perspectives on the impacts of microcredit. In the second section, we review some of the limitations of the study, which include both contextual and methodological limitations. The third section explores the relevance of the study findings for improving the design and management of microfinance programs. In the final section, we return to some of the questions posed in the introduction to discuss a few of the policy implications of the study.

### A. Principal Impact Findings

#### A.1. Summary of Major Impact Results

Summaries of the principal impact findings can be found in the final sections of sections five, six, and seven. The major statistical impact results are restated here, but in a brief format and without the normal caveats about the limitations of the results. Instead, the second section of this section focuses entirely on the limitations of the study and its findings.

#### *Summary of Enterprise-Level Impact Findings*

- Positive impacts on combined **enterprise net revenues** accruing as annual profits to the household. The estimated magnitudes of the impacts were US\$1,000 for treatment group households and US\$740 for new entrant households.
- Positive impacts on the value of **enterprise fixed assets** in the primary enterprises of treatment group households. The estimated magnitude of this impact was US\$500.
- Positive impacts on **enterprise employment** among microenterprises in the treatment group. The estimated increase in enterprise employment among all enterprises associated with a treatment group household was nine additional days of employment per month for all workers and 3.26 additional days of employment per month for non-household workers.
- Positive impacts on the incidence of **business premise ownership** among entrepreneurs in the treatment group, estimated to be a nine percent increase in premise ownership.

- Positive impacts on **sources of input supplies** for commercial enterprises in the treatment group, estimated to be a nine percent increase in the number of commercial enterprises reporting that their main suppliers were wholesalers or manufacturers.
- Positive impacts on the incidence of **municipal business licenses** for enterprises in the treatment group, estimated to be a four percent increase in licensing.

#### *Summary of Household-Level Impact Findings*

- Positive impacts on total annual **household income** for households in the treatment group. The estimated magnitude of this impact in real terms was US\$1,200 per household and US\$266 per person per year.
- Positive impacts (increases in diversification) in the **diversification of income sources** for poor households in the treatment group and negative impacts (increases in specialization) for non-poor households in the new entrant group.
- Negative impacts on **education expenditures** by new entrant households. The estimated magnitude of this impact was US\$59 per student per year.
- Negative impacts (increases) on the use of asset-reducing coping strategies in response to financial shocks, estimated to be a nine percent increase in the use of asset-reducing strategies.

#### *Summary of Individual-Level Impact Findings*

- Positive impacts on entrepreneurs' feelings of **preparedness for the future**, with entrepreneurs in the treatment and new entrant groups estimated to be eight percent and 20 percent more likely to report feelings of preparedness, respectively, than entrepreneurs in the control group.

### **A.2. Microcredit Impacts Among the Poor**

The impact findings summarized above come from the ANCOVA results for the entire sample, which includes both poor and non-poor households. In order to better understand microcredit impacts among the poor, the same ANCOVA models were estimated a second time using only the data from households categorized as poor in 1997. The results for the poor are generally consistent with the results for the entire sample, with a few exceptions.

#### ***A.2.a. Impacts at the enterprise level***

At the enterprise level, the separate analysis of enterprises associated with poor households resulted in findings that were similar to the findings for the sample as a whole. Microcredit appeared to have positive impacts on microenterprise revenues (for both the treatment and new entrant groups) and positive impacts on enterprise fixed assets (for the treatment group only). In



contrast with the findings for the sample as a whole, however, there was no evidence of employment impacts in the enterprises of poor households. In other words, the positive impacts of microcredit on employment appear to be confined to the enterprises of non-poor households. In addition, there was only weak evidence that microcredit had a positive impact on ownership of the business premise and there was no evidence of any impacts on formalization among the enterprises of the poor.

#### *A.2.b. Impacts at the household level*

At the household level, the findings for the poor were also generally consistent with those for the full sample. The poor in the treatment group appear to have experienced large positive impacts on household income, as measured in both overall and per capita terms. The estimated magnitude of these impacts in real terms, at approximately US\$1,200 per household and US\$310 per person per year, was nearly the same as for the treatment group as a whole. For expenditures on housing improvements, consumer durables, education, and food, there were no measurable impacts on poor clients. These results are consistent with the findings for the entire sample. Though there were sharp drops in spending for most of these variables over the study period, it appears that the poor and non-poor from all comparison groups lowered expenditures by similar magnitudes.<sup>77</sup> Finally, the results for intergenerational launching among the poor mirror the results for the entire sample; households receiving microcredit were more likely to launch a dependent into his or her own enterprise than non-client households.

While the results of analyzing the data for poor households generally echoed the results for the entire sample, there were some important differences between poor and non-poor households. For income diversification, for example, the results differed between the poor and non-poor, though in predictable ways related to risk management. The impact results indicated that the poor in the treatment group were better able to maintain their levels of diversification than the poor in the control group. The impact of microcredit on the poor, then, may have been to help them hold their levels of income diversification steady while households who did not use microcredit were becoming less diverse.

Among the non-poor, a comparison of income diversification in new entrant and control group households indicated that households with microcredit responded to the recession by maintaining their existing (and perhaps desired) levels of diversification (or specialization), while households without microcredit increased their levels of income diversification. Taken together with the results for household income, the results suggest that by helping poor and non-poor clients to achieve and maintain their desired levels of diversification, microcredit served to increase the income levels of both of these groups relative to the income levels for the poor and non-poor who did not receive microcredit.

The results also indicated that, when poor clients are faced with a financial shock, microfinance can have a negative impact on their propensity to resort to asset-reducing coping strategies. Though this result was similar to that for the entire sample (see section six), the magnitude was greater for the poor. Compared to similar control group households, poor households who

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<sup>77</sup> Only poor households in the treatment group reported a significant increase in per capita food expenditures between 1997 and 1999.

received credit were estimated to be over 20 percent more likely to liquidate an asset in response to a crisis. With already low income levels, the liquidation of a productive asset may be one of the few options they have for protecting their credit record, even though the loss of such an asset could hurt a household's economic potential.

### *A.2.c. Impacts on poverty*

Finally, a separate analysis of movement around the poverty line suggested that microcredit may have positive impacts on poverty alleviation. This analysis was based on the expenditure method for measuring poverty, which is the same method used to establish Peru's national poverty line. The results of an ANCOVA analysis suggest that microcredit may have had a positive impact on poverty alleviation among households in the treatment group. While both the treatment and the control group had significantly lower incidences of poverty in 1999 than in 1997, for households starting with the same poverty level, the same number of income sources, and the same number of economically active household members in 1997, treatment group households were estimated to be six percent more likely to be above the poverty line by 1999 ( $p < .10$ ). It should be kept in mind, however, that this represents a net change of six percent: some households may have dropped below the poverty line while others rose above it.

The impact results for the new entrant households were different, indicating that microcredit may have had a negative impact on poverty levels for this group. Among households with similar 1997 values on the variables noted above, new entrant households were estimated to be nearly 15 percent less likely to have moved out of poverty by 1999 ( $p < .10$ ). It is important to remember, however, that the poverty measure used is expenditure-based. Based on this measure, higher poverty rates are detected in terms of decreased consumption. It is possible that the new entrant households curtailed consumption expenditures immediately after beginning to borrow from ACP/Mibanco in order to invest more heavily in their businesses. The fact that poverty alleviation impacts were positive for the treatment group suggests that the negative impacts for the new entrant group may be temporary. If they were consuming less as new borrowers in order to invest more in their enterprises, it is possible that these investments will pay off in terms of increased income and consumption in the future.

### *A.3. Relationships between Impacts and Time in Program*

Microcredit dosage, or some measure of the amount of microcredit that a client receives, can be expected to affect the magnitude of impacts that occur. For this study, dosage is measured as the total amount of time, in years, that had elapsed between the disbursement date of the first ACP/Mibanco loan received and the end of the last loan received or the time of the second survey, whichever came first.<sup>78</sup> If impacts are detected, it is expected that the magnitude of positive change in the value of the impact variables will increase with the length of time that a client borrows from ACP/Mibanco. In other words, a positive relationship between time in program and the impact variables would indicate that microcredit impacts are expected to be larger for clients who have been borrowing for a longer period of time.

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<sup>78</sup> For example, if a client received her first loan one month prior to the first survey and had an outstanding loan at the time of the second survey, her total time in the program would be two years and one month, or 2.08 years. Non-clients in the sample received a "zero" value.

The measure of time in program was included as an independent variable in multiple linear (for continuous variables) and logistic (for categorical variables) regression analyses that were run for key impact variables. The models used the same moderating variables that were included in the ANCOVA analyses presented in sections five, six, and seven. Results of the time in program analysis are presented below. Only those results that complement or help to explain the ANCOVA findings are presented. No results are given on variables for which the ANCOVA and time in program results did not point to significant relationships between microcredit and the impact variables.

The results of the time in program analyses mirror the findings of the ANCOVA for nearly all of the variables tested (see appendix 4). Where the ANCOVA indicated that there were positive microcredit impacts on these variables, the time in program analysis indicates that the magnitude of these impacts might be expected to be higher with increased program participation.

Table 8.1. Time in Program Analysis for Enterprise-Level Impact Variables

Impact Variable	Parameter Estimate for Time in Program Variable
E-1a: Revenue from Up to Three Enterprises (soles) <sup>a</sup>	258*
E-1b: Net Revenue from All Enterprises (soles) <sup>a</sup>	1265***
E-2: Enterprise Fixed Assets (soles) <sup>a</sup>	409*
H-3c: Enterprise Fixed Assets All Enterprises (soles) <sup>a</sup>	526*
E-4d: Ownership of Business Premise (1=owned) <sup>b</sup>	.212**
E-5a: Licensed with Municipality (1=registered) <sup>b</sup>	.151*

\* p<.10; \*\* p<.05; \*\*\* p<.01

<sup>a</sup> Linear Regression; <sup>b</sup> Logistic Regression

The results from the time in program analysis indicated that the values for key enterprise-level variables are estimated to increase with the amount of time the client is in the ACP/Mibanco credit program (table 8.1). For example, net annual enterprise revenue (profit) from all household enterprises is estimated to be S/1,265 (US\$372) higher for each year of program participation. Results also showed length of program participation to be significantly related to the accumulation of enterprise fixed assets for both the primary enterprise and the combined enterprises of the household. Since it is expected that fixed assets would be purchased over time, this finding is important because it suggests that as clients borrow over longer periods they are able to accumulate more fixed assets. Finally, results indicate that the incidence of business premise ownership and incidence of municipal licensing increase as time in the program increases.

At the household level, the time in program analysis indicated that length of program participation is significantly related to changes in household income (table 8.2). Results for the total and per capita household income variables complement the ANCOVA findings for the same variables (see appendix 4). While the ANCOVA provided evidence that microcredit had positive

impacts on overall and per capita income, the time in program analysis suggests that these impacts might be expected to increase as levels of program participation increase.

The time in program results provided evidence that aids in the interpretation of the ANCOVA results for coping with shocks. The ANCOVA results indicated that microcredit had a negative impact on coping strategies that could potentially harm a household's productive resources. The results of the time in program analysis, however, indicated that the incidence of asset-reducing coping strategies is not significantly related to the amount of time in the program. In other words, if microcredit has negative impacts on coping strategies, they are not expected to increase with length of participation. Finally, the incidence of intergenerational launching was positively related to length of program participation.

Table 8.2. Time in Program Analysis for Household-Level Impact Variables

Impact Variable	Parameter Estimate for Time in Program Variable
H-1: Total Household Income (soles) <sup>a</sup>	1423***
H-1a: Per Capita Household Income (soles) <sup>a</sup>	377***
H-7: Intergenerational Launching (1=launch) <sup>b</sup>	.19***

\* p<.10; \*\* p<.05; \*\*\* p<.01

<sup>a</sup> Linear Regression; <sup>b</sup> Probit Analysis

In summary, the findings of this analysis imply that length of participation in the ACP/Mibanco program matters. For almost all of the variables for which the ANCOVA results provided evidence of microcredit impacts, the results of the time in program analysis indicated that the magnitude of these impacts is positively related to the amount of time that clients are in the program. In other words, the combined results suggest that the longer a client borrows from ACP/Mibanco, the higher will be the level of positive impacts.

#### *A.4. Impacts from the Clients' Perspectives*

Throughout the case study interviews, entrepreneurs told of the ways that credit had had both positive and negative impacts on their enterprises and their lives. This section concludes the discussion of the impacts of microcredit by providing the clients an opportunity to talk about the impacts of microcredit in their own words.

##### *A.4.a. To feed and clothe my children*

**Ana** (case A), when asked if using loans had been beneficial to her, responded that they are important to the well-being of her household:

To me it seems that the benefits I receive are that I can feed myself and feed my children, and sometimes buy them clothes. . . . For me it's positive, because it helps me. For example, right now that Mibanco has not given me my loan on

Monday,<sup>79</sup> look at my business. It's empty. I mean, it's ok, but it's not good. Now they've told me that they're going to give me my loan tomorrow, I think. I'm going to see how much they give me, and I'll buy my roll-up door and stock up . . . invest a little in merchandise . . . that way I can make progress.

ACP/Mibanco loans are used almost exclusively for her store, helping her to maintain inventory levels and to purchase fixed assets. Ana believes that loans have helped her to put food on the table and clothes on her children's backs.

As noted in earlier sections, Ana and her husband began borrowing from other entities in addition to ACP/Mibanco. This increase in debt has had unexpected negative effects on Ana's household. The need to save for loan payments has forced the family into a state of constant deprivation, lowering quality of life. The resulting stress has strained family relationships. Ana and her husband fight often, and her eldest son left home. While Ana clearly values ACP/Mibanco loans as a business tool, her case is also illustrative of what can happen when a household becomes overextended.

#### *A.4.b. To keep my customers*

**Jorge** (case B) and **Patricia** place high value on credit as a tool that helps them to maintain their customer base by keeping their store well-stocked:

I mean, the clients don't go elsewhere because they find everything that they are looking for. [This happens] only if you have capital. If you don't have capital you can't buy [inventory]. So that's why we take [loans] from the bank . . . to try to buy what we don't have. Then, we sell the product, revenue is generated, and we pay. That's it. . . . It has helped quite a bit, you know? Sometimes we didn't have inventory--it supported us in the purchase of inventory. Also, I still have the preference of the public. I'm very thankful . . . [loans are] one more support.

Jorge agreed that the loans, insofar as they have augmented their purchasing ability, have been a help. He was quick to point out, however, that the loans are valuable only when business is good. When sales are high, the S/100 that they pay in interest on a monthly basis is not much relative to revenue. When business is slow, however, the amount of merchandise that they turn over does not justify the taking of a loan because the S/100 represents a major claim on revenue flows.

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<sup>79</sup> ACP/Mibanco had delayed the disbursement of her loan because she had missed a payment on her previous one.

#### ***A.4.c. To have a reliable source of capital on reasonable terms***

**Pepa** (case C) is no longer receiving loans, but appreciates them in retrospect:

I think that to have credit is a confidence that you have a sure source of money. That's why you make the effort to pay. When you fulfill your obligation, they increase your credit. For me it's a big help. Not having it is a limitation. For example, I do a *junta*, but I have to do a small *junta*, because the people around here can't save much. If I need a certain quantity, I have to do several *juntas*. . . . [With credit] I could make the business what I wanted it to be. It was a great help, like when someone gives you a hand with something that you don't have so that you can succeed.

Because Pepa can no longer get loans, she has to expend time and energy organizing ROSCAs in order to raise working capital. Though ROSCAs substitute for loans to a certain extent, they do not provide her with as much capital as loans did *and* she spends an inordinate amount of time raising capital rather than employing her energies in profitable activities. The high transaction costs associated with her capital-raising activities lower her overall productivity and curtail her progress.

#### ***A.4.d. To expand and invest***

**Efraín** (case F) has employed credit almost exclusively for productive activities. He uses loans primarily for inventory, but he has also used parts of loans for housing improvements. Over the years, credit has helped him to expand his business and facilitated the construction of a second floor with rental units:

It seems like a lie, but the more money you have, the more you invest [in inventory], and the more you earn. Everything depends on the dynamic that one creates. . . . With the money from the credit I went to buy a little more merchandise, and with that I was able to grow the business. Sometimes my clients would ask me for some kind of merchandise and I didn't have the capital to take care of them. The credit was a great help. I bought more things. . . . [The credit has been important] as much for my business as for [construction of the rooms for rent] upstairs. Upstairs is important because I now have something that I have done that is there to rent. Now I'll have another source of income there. It will free me from the tax, electricity, water, and telephone payments. I'll pay with that income. . . . We couldn't have done it [without the loans]. . . . [The loans] have always been positive.

Credit has helped Efraín to solidify his household's economic position in two important ways. By investing loans in inventory, he has slowly built up and diversified his business to the point where he is considering opening a commercial storefront in addition to his cart in an informal market. He has also constructed rooms for rent, income from which will increase household economic stability and security.

**Laura** (case K) has used loans to purchase larger quantities of inventory, expand her lines of merchandise, and invest in fixed assets. In addition, she feels that borrowing from ACP/Mibanco gives her the time and peace of mind to work the loan money and make a profit; things that she would not have if she were to purchase inventory using supplier credit or borrow from a moneylender:

The way I used to work was with a small amount of capital, so I worked with a minimum, a little bit. When Acción Comunitaria gave me the loan I bought merchandise and stocked my store. As they loan a larger amount, you buy more things that you need in a store. Not long ago I bought a refrigerator. Soon I want to buy a photocopier. With the credit that they give us we can help ourselves. You can buy in cash--because here the distributors provide credit but they overcharge you, it's not ideal.

Laura counts on ACP/Mibanco loans as a key piece of her financial management strategy. Because she knows that ACP/Mibanco will always give her loans, she can plan her purchases ahead of time. Since the interest on loans is not too high, she explained, carefully planned purchases can yield higher profits.

#### *A.4.e. To reach my goals*

**Jacinta** (case J) has used ACP/Mibanco credit for years. She related that loans had helped her to generate sufficient revenue from her business to educate her children and slowly purchase a market stall. These investments paid off for her; her son and daughter are a doctor and a banker, respectively, and the sale of her stall enabled her to buy a much more profitable location in a newer market. Jacinta feels that almost more than anything else, she appreciates the disciplinary effect that borrowing has for her:

. . . one advantage is that I have to use that money--I have to look for cheaper, more comfortable [prices] with that money. I have to look for sales. So, I put that money to work, so I can repay [the loan]. I have to look for small discounts, to use it there. That's the advantage. . . . I have to be thinking.

Jacinta expressed that since she knows that she is paying interest and must make payments regularly, the loans assist her in keeping her focus on maximizing profits. In effect, since she has to both cover loan interest and make a profit, the loans provide her with an extra incentive to find better input prices, turn inventory over quickly, and secure higher sales margins. This discipline has helped her to meet household goals over the years and, more recently, to turn what was once a small retail shop into a high-volume retail and wholesale operation.

#### *A.4.f. To make up for my husband's lost job*

**Martina** (case M) and **Mario** believe that the ACP/Mibanco loans helped them to build the business back up after the loss of Mario's salary income led to a decline in capital. Martina does not think she would have been able to bring it back without the loans:



Taking loans from Mibanco . . . that's how I'm picking my business up. . . . Because we didn't have capital. Now I've put a roof on my house. They give us a loan, I use it, I pay it, and I have something left over. They give me another one; I buy again. Without capital you can't do anything. That's why I'm working [with Mibanco].

Martina nearly always uses loans as working capital, preferring to make household purchases or investments with the surplus revenue that is generated from her enterprise rather than investing loans directly. This strategy has proven fruitful. She and her husband have made significant housing improvements even without a steady income from Mario, and her store is the most popular of several on her block. When asked how she competes with the other stores on her block, she winked and said, "They're barely surviving. One just sells beer, the other just a few things. Why? They don't know about Mibanco!"

#### *A.4.g. To cover a range of expenses*

**Pablo** (case D) and **Bety** value the financial flexibility that loans provide. Depending on their needs, they might use some or all of a loan for inventory, to pay debts, to purchase fixed assets, or even to make housing improvements:

The advantage [of loans] is that when one has more merchandise or is better stocked, one sells more. If one doesn't have much, one doesn't sell much. The lack of merchandise is the reason that one asks for credit. Apart from that, I have some debts to pay at home, and Acción Comunitaria helps me with that. The credit is not just for the business, but also for other needs that one has to cover. That's the help of Acción Comunitaria. It gets you out of a pinch and the interest is low. . . . The business has improved a bit with the loan[s]. We've bought the display case, we've bought more merchandise . . . the last loan that we had we invested in the house. [Without credit] we wouldn't have done that.

For Pablo and Bety, loans serve a variety of purposes: they are employed as working capital, they are used to cover household obligations, and they facilitate investments.

**Dora** (case G), like Pablo and Bety, uses credit for a variety of purposes ranging from consumption to investment. She values loans as working capital, but also feels proud of the housing improvements that loans have facilitated. She also appreciates that loans come in handy when her family is faced with extraordinary expenses such as medical bills:

Before I solicited loans, my house was little more than a hovel. Using both *juntas* and loans I've pulled together money to build my house, so that my children can each have a room. We couldn't live forever all together in one room . . . so I built my house, and paid the loan at the same time.

[Loans] help us a lot because sometimes we don't have anything, and that day we take out [a loan] and buy merchandise. Or when my son is sick, I also buy medicine, you know? An emergency, and I don't have anything, neither does my



husband--I take out a loan and get it with that money. . . . When they ask me for school supplies or books in my children's school, I buy it with Mibanco. For everything--thanks to Mibanco--not just for one thing.

Dora sees loans as all-purpose funds that, depending on prevailing circumstances, might be used as working capital, for housing investments, or for consumption. In short, Dora values having steady access to credit because loans help her to meet both enterprise and household expenses.

Each of the case study informants appears to value ACP/Mibanco credit in a unique way according to the particular manner in which they use their loans. Most value loans strictly as working capital: they purchase larger quantities of inventory at reduced prices in order to increase revenue and expand their enterprises. Those that sometimes use loans to purchase fixed assets or make housing improvements appreciate that they can use these lump sums of cash to make productive investments. Still others turn to loans to meet special consumption needs when they are short on cash.

Thus, though households generally use ACP/Mibanco loans as working capital, it is important to recognize that, as circumstances change over time, the ways that households use credit may also change. Market forces, changes in the household economic portfolio, unexpected shocks, and other factors influence household financial management over time, and entrepreneurs direct credit toward the uses that they deem most important at any given moment. In sum, what the case study informants appear to value most about ACP/Mibanco microcredit is that it provides them with added financial flexibility. For most of them, credit has become an important multi-purpose tool that increases their ability to make choices, deal with changing circumstances, and to take advantage of opportunities that may not have been available before.

## **B. Limitations and Contributions of the Study**

The results of this study suggest that there are numerous positive and negative impacts of microcredit. However, the findings should be interpreted cautiously. Because of the contextual limitations of the study, the reader should not attempt to generalize the findings too far from the specific context in which the study was conducted. Because of the methodological limitations, the reader should use caution in interpreting the size and precision of the estimated impacts. Despite these real limitations, the study results provide a coherent and informative picture of Lima's microentrepreneurs and their financial management strategies. It represents a serious and comprehensive analysis of the impacts of microcredit on entrepreneurs, their businesses, and their households, and it makes several contributions to the field of impact evaluation in microfinance.

### **B.1. Contextual Limitations**

There are two main contextual limitations to this study. The first relates to the characteristics of the actual financial product being evaluated, and the second relates to the environment in which the evaluation was conducted. Both of these limitations affect the generalizability of the findings. In other words, the impact findings from this study can be generalized most easily to situations that match the conditions in the study, which are summarized below.

The type of financial product evaluated in this study was short-term, “minimalist” credit. As described in section two (section E), the credit was usually only two to four months in length and repayments were made frequently (weekly, biweekly, or monthly). While potential borrowers were required to have an on-going microenterprise in order to qualify for a loan, a borrower’s use of the loan proceeds was not monitored or restricted by the lender. At the time of the study, ACP/Mibanco did not provide any additional financial services or formal business development services. The impact findings from this study are most generalizable to microcredit programs with similar characteristics.

As described in section four (section C), the ACP/Mibanco loan usually represents one component of a complex set of financial management strategies within the household economic portfolio. For many households, the ACP/Mibanco loan was only one of several types of credit received. On average, the size of the ACP/Mibanco loan was twenty percent of total gross enterprise revenues or one-third of total household income earned over the length of the loan. Thus, the size and importance of the ACP/Mibanco loan relative to the overall household economic portfolio was significant but should not be overly exaggerated. In addition, the average length of time in the program was relatively short: the average borrower in the treatment group had been an ACP/Mibanco client for only 2.5 years and had received 7.7 loans. It is within this context of relatively small but substantial loans over relatively short periods of time that the impact findings reported in this study are most applicable.

The environment in which the study was conducted should also be considered in determining the applicability of the findings to other settings. A major environmental factor that shaped the impact findings was the economic recession between the two survey periods. This probably served to dampen some of the positive impacts that might have been found during a growth period. On the other hand, relative to other microenterprise settings around the globe, the context of metropolitan Lima offered well-developed infrastructure and a well-educated population of entrepreneurs. Over the course of the study, alternative sources of formal and semi-formal credit for microenterprises were becoming increasingly available, so that ACP/Mibanco was not the only source for formal microenterprise credit. A detailed description of the environment for the evaluation is provided in section two. In general, the more closely that an environment offers similar conditions, the more applicable the findings of this study will be to that setting. Both the direction and the magnitude of the impact findings were undoubtedly influenced by the economic context in which they occurred.

## **B.2. Methodological Limitations**

There are significant methodological limitations to this study, and these limitations need to be kept in mind when evaluating and interpreting the impact results. As described in section three (section E), the most important limitation is the inability to remove all influences of selection bias from the impact results. The ideal approach for removing selection bias is to follow an experimental design in which qualified borrowers are randomly assigned to receive or not receive program services. Because of logistical, ethical, and programmatic objections, an experimental design was not used.

This study was based on a quasi-experimental design, which probably removed some, but not all, of the influence of selection bias on the results. Additional steps taken to reduce the influence of selection bias included the use of longitudinal data to control for the starting levels of the impact variables and an estimation approach that was based on a statistical matching of similar observations in the treatment and control groups. Despite these measures, some degree of selection bias probably persists, which may have resulted in overestimation of positive impacts and underestimation of negative impacts.

On the other hand, a second methodological limitation of the study is that the baseline measurement is not a true pre-treatment measurement. Because of this, some of the positive and negative impacts of microcredit may already be present in the baseline measure. In combination with the analytical approach that was used, this lack of a pre-treatment measure may have led to underestimation of both positive and negative impacts. While the lack of a pre-treatment measure may counterbalance some of the influence of selection bias on positive impacts, these two influences can both contribute to underestimation of the negative impacts of microcredit. Consequently, the study may seriously underestimate the incidence or magnitude of negative impacts on borrowers.

Another way that the study may be understating the negative impacts of microcredit is by failing to account for possible displacement effects. In other words, no attempt was made to calculate the degree to which the gains to clients came as a direct consequence of market displacement of non-clients. In fact, since the control group was drawn from entrepreneurs operating in the same markets as the clients, then it could be argued that the measured gap between the treatment and control group enterprises was at least partially due to borrowers being able to take business away from non-borrowers. While this argument cannot logically be applied to several of the impact variables (e.g. employment, municipal licenses), it does imply that the net benefits of microcredit may be overstated in the study findings.

Other limitations of the study related to the weaknesses of some of the impact indicators used, especially at the individual level. Many of the individual-level hypotheses were not adequately tested because the indicators used to measure the impact variables were not sensitive enough to measure any subtle changes that had occurred. On the other hand, the case study evidence tended to be consistent with the statistical results in finding little indication of the hypothesized psychological benefits of microcredit.

The methods used to analyze impacts were limited by the availability of reliable credit data. Limitations on the type and quality of credit data available meant that it was necessary to use a less sophisticated measure of the microcredit treatment variable. In the impact analysis, treatment was defined as having received one or more ACP/Mibanco loans at least two years before the 1999 survey. In addition, complementary information was provided from an analysis of a new entrant group (those with first loans less than two years before the 1999 survey) and from the time in program analysis.

In closing, this study has important methodological limitations that should be kept in mind when interpreting the results. Future impact studies could improve on this one through the use of an experimental design with a true pre-treatment baseline, attention to displacement effects, and the

collection of more reliable psychological and credit data. The data set from this study could also be analyzed using alternative statistical approaches and alternative assumptions. Some of the study findings may be robust under alternative approaches and others may not, depending on the statistical approach and assumptions used.

### **B.3. Contributions to Impact Evaluation in Microfinance**

Despite its limitations, the study makes several contributions to the field of impact evaluation in microfinance. First, it deals squarely with the problem of fungibility by widening the unit of analysis beyond the credit-supported microenterprise to include impacts on the entire household economy. The issue of fungibility of credit is resolved in the study through this broadening of the unit of analysis and the testing of a number of impact hypotheses at several levels.

A second contribution of the study is that it addresses the problem of attribution in several ways. First, the study is based on a conceptual model of the household economic portfolio that provides a plausible link between the receipt of microcredit and the hypothesized impacts. Second, the study relies on a mixed method approach that uses carefully collected and analyzed case study data to examine the counterfactual and to test for the existence of rival hypotheses. Finally, the use of a control group in the longitudinal survey assures that any changes in the impact variables that are due to changes in the economic environment have not been incorrectly attributed to the impact of microcredit.

Finally, the study generates estimates of the directions and magnitudes of several of the economic impacts associated with microcredit. This information is appropriate for assessing the relative costs and benefits of using microcredit, rather than some other form of assistance, to achieve social development objectives. In general, the impact results contribute to the slowly growing body of evidence on the impacts of microcredit.

In summary, the study provides a comprehensive portrait of Lima's microentrepreneurs and the ways that they manage their enterprises within the household economy. The findings are based on a careful analysis of microcredit impacts at the enterprise, household, and individual levels. The study makes a major contribution toward the broader goal of understanding the clients of microfinance.

## **C. Implications for Microfinance Organizations**

### **C.1. Correcting Assumptions About Clients**

The findings refute common industry assumptions about the ways that entrepreneurs use microcredit. There were high rates of program attrition, with 58 percent of clients leaving the program after two years. This contradicts the widely held view that typical borrowers will become engaged in long-term relationships with microfinance organizations. In fact, the available data indicate that the business relationship between the microfinance organization and the borrower lasts for an average of only one or two years.<sup>80</sup>

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<sup>80</sup> To review the details on program participation and program attrition, see chapter four, section C.

Another assumption is that clients will seek ever increasing loan amounts over time. While this is certainly true for some long-term clients, the pattern is not universally borne out by the data. Some clients may seek to maintain a long-term business relationship with the microfinance organization, but do not want to borrow the maximum amount in each loan cycle. Instead, clients compare the credit available from the microfinance organization with their current working capital requirements, other sources of available credit on different terms, and their expectations about future business opportunities and repayment capacity.

Given the complexity of financial management decisions that entrepreneurs make and the variety of circumstances that they face, it appears naive to assume that most clients will want to continuously renew their loans in ever increasing amounts. It is unrealistic to assume that the normal situation for clients should be an unending and deepening renewal of debt. Yet, this assumption is sometimes put forth as a cornerstone for calculating the financial sustainability of microfinance organizations. By contrast, the findings of this study indicate that clients will respond to changes in circumstances—such as economic recession, new market opportunities, the availability of alternative and complementary types of financial services, financial crises, or family instability—by adjusting their loan requests.

It is sometimes assumed that program attrition necessarily implies dissatisfaction with the product. While this is true on some level, another perspective is to consider that clients (and potential clients) are always seeking the best combination of financial products and services to fit their particular circumstances at the moment. While it is impractical for a single microfinance organization to offer every possible product and service, the study findings do indicate specific ways that microfinance organizations could become more responsive to the financial management realities of the households in the study.

## **C.2. Increasing Responsiveness to Clients**

There are several products and services that the microfinance industry could offer to increase its responsiveness to the potential microfinance market. Of course, the entrepreneurs and households described in this study are not a homogeneous group and do not represent a monolithic market for any one product. Whether the new products and services suggested in this section would be profitable for the industry is a topic that warrants further investigation, but goes beyond the scope of this study.

### ***C.2.a. Microenterprise-related products and services***

The findings indicate that the type of microcredit evaluated in this study has been and will continue to be most appropriate for commercial sector enterprises engaged in the resale of goods. The vast majority (78 percent) of the randomly selected sample of clients in 1997 borrowed to finance a commercial-sector enterprise. The percentage of clients with commercial enterprises who entered the program between 1997 and 1999 was even higher, at 87 percent of new entrants. At the same time, the attrition rate for industrial and service microenterprises over this two-year period was notably higher than for commercial enterprises, at 70 percent and 57 percent, respectively.

In order to create a microcredit product that is more useful to industrial-sector enterprises, certain changes in the loan terms would be needed. The small sample of industrial enterprises in the study were quite uniform in using home-based premises and employing a relatively large number of non-household members. Many of these enterprises would probably consider using borrowed capital to expand or improve their productive physical assets. This would allow them to expand production and/or to employ hired workers more productively. While the increased productivity of the enterprise could conceivably cover the cost of the loan, the returns would accrue more slowly over time, requiring several product cycles to be realized. In order to finance long-term capital equipment improvements, industrial sector enterprises would need loans that are amortized over a longer period of time and that require less frequent payments.

There were also entrepreneurs in all sectors who were able to productively employ larger loans than were being offered by ACP/Mibanco during the study period. Even though there were a growing number of microcredit alternatives in Lima, there was still a gap between “microcredit” and “macrocredit.” A small but important minority of respondents (about 14 percent of ACP/Mibanco clients) filled this gap by taking multiple microcredit loans for their enterprises.

Rather than representing a situation in which borrowers were seeking to take advantage of differing loan terms, in some cases borrowers were probably taking multiple loans because they had reached program-imposed upper limits on loan size. Many of these borrowers would probably prefer the convenience of having a single loan. In order to respond to these clients, microfinance organizations may want to offer a special category of larger microenterprise loans (“jumbo loans”) to clients with good credit records who are operating highly profitable microenterprises.

Another area in which borrowers would like greater flexibility is in the timing of the loan cycle and the availability of additional loans at mid-cycle. For entrepreneurs in the commercial sector, opportunities to buy inventory on favorable terms can arise at unpredictable times. If lenders could offer supplementary loans that could be taken on top of an existing loan, then commercial-sector clients could respond more easily to these profitable opportunities.

Finally, microfinance organizations may find it in their best interests to assist entrepreneurs in navigating the somewhat treacherous waters of federal business taxes. While this non-financial service would probably not be profitable in and of itself, it may help to protect the microfinance organization’s microcredit portfolio by reducing the incidence of forced business closures among borrowers. Please note that we are not advocating that the microfinance organization should make participation in the tax system a prerequisite for receiving a loan. Rather, simple training on tax compliance issues represents a business development service that would respond to clients’ needs while potentially improving the quality of the lender’s portfolio.

### ***C.2.b. Other products and services***

The study confirmed that microentrepreneurs have many credit and savings practices that are not directly related to microenterprises. Although all financial management within the household economic portfolio is interrelated in some ways, the evidence suggests that respondents often

keep separate mental accounts for separate purposes. Microfinance organizations could improve their responsiveness to clients by offering non-enterprise products and services, where feasible.

The findings are consistent with the idea that households may “save up”, “save down”, or “save through” for different types of large cash expenditures (Rutherford 2000). Outside of enterprise expenditures, this was most obvious within the context of education and housing expenditures. Whether microfinance organizations should offer credit or savings products (or both) for education and/or housing expenditures would depend on the profit potential for the microfinance organization. However, it is clear from the study that these are two very important areas for household financial management among Lima’s microentrepreneurs.

The findings also indicate that the respondents are not enthusiastic about holding liquid savings in bank accounts. There are many negative attitudes toward bank-held savings, partly due to a history of bank failures and partly due to the low returns on savings relative to investing the liquidity in commercial inventory. These attitudes create a challenging environment for the creation of an appropriate savings product for this community. On the other hand, there is a strong presence of rotating savings and credit associations (ROSCAs) among the respondent population, particularly among the women. A microfinance organization might want to adapt the characteristics of a ROSCA to, for example, create an educational finance program marketed toward mothers of school children.

It should be clear from this discussion that microfinance is broader than simply making loans to promote microenterprise development. In fact, microenterprise development is only a subset of microfinance. More accurately, microfinance should be viewed as the provision of microfinancial services to households. Even the microcredit product evaluated in this study, although ostensibly provided for microenterprises, was often used for non-enterprise purposes within the household economy. Microfinance organizations should recognize that they can potentially provide many more financial services to low-income households than simply loans for microenterprises.

### **C.3. Dealing with Clients as Members of Households**

Microfinance organizations should explicitly acknowledge that clients are both individuals and members of households. In this respect, an understanding of the household economic portfolio can provide the microfinance organization with useful information about the resources, activities, and decision-making patterns within the household. For example, the creditworthiness and repayment capacity of a microentrepreneur can be assessed relative not only to a single microenterprise, but also to other income flows within the household. Knowledge of the household economic portfolio can provide the microfinance organization with more realistic expectations about the relative demands on the revenues of a microenterprise and the multiple sources of support for the enterprise within the household economy.

The fact that many households have more than one microentrepreneur represents both a challenge and an opportunity for microfinance organizations. At the time of the study, ACP/Mibanco had a policy of providing a loan to only one member of a household. And yet, there were many borrowers in the study who managed one enterprise but were married to another



entrepreneur managing a second microenterprise. The results on intergenerational launching also indicated that entrepreneurial parents may provide support to their children in establishing new enterprises.

In the example from the case studies of **Dolores** and her husband, the couple could only borrow on the basis of Dolores' microenterprise, but they allocated the loan funds to the two enterprises, depending on where the funds could provide the greatest return. For this married couple, the ability to qualify for loans on the combined basis of the two microenterprises might have resulted in larger loans from ACP/Mibanco. Because the combined repayment capacity of both enterprises was not factored into the loan size, this household turned to other sources of microenterprise credit to supplement their ACP/Mibanco loan. The policy of excluding spouses from borrowing jointly based on multiple microenterprises should be reexamined.

In another case, as with **Pepa** and her ex-husband, the ability of the husband to secure a loan and to default on the loan during Pepa's illness resulted in her loss of future access to ACP/Mibanco credit. By extending credit to her husband without her knowledge, ACP/Mibanco lost a good client. While this is a particularly drastic example of a meddling spouse, the survey results suggest that many husbands, upon their loss of formal sector employment, may take an intense interest in their wife's microenterprise. The degree to which married couples can productively coordinate microenterprise activities and household financial management appears to vary widely, primarily on the basis of the nature of the relationship within the marriage.

Finally, an important implication of the findings relates to the ways that microfinance organizations deal with households who face an unexpected financial loss (shock). The findings indicate that households will go to great lengths to remain in good standing with the lender. Among poor households, this determination to meet the pre-arranged repayment schedule sometimes leads to the liquidation of the household's productive assets, a strategy that can be harmful to the household in the long run. Microfinance organizations should consider the feasibility of providing clients with refinancing options that help clients to cope effectively with shocks. While lenders should avoid creating a moral hazard problem, they also should evaluate alternative refinancing programs based on the principle "to do no harm."

## **D. Policy Implications**

As a way of closing this study, we return to answer some of the original questions posed in the introduction. The results of this study indicate that the clients of ACP/Mibanco may receive both positive and negative impacts from microcredit. The sections in part two have provided details about specific impacts and their estimated magnitudes. The impacts of microcredit have been shown to extend from the microenterprise to affect the household more generally. This final section considers some of the implications of the findings in terms of household financial management, microenterprise development, women, the poor, and household welfare.

### **D.1. Household Financial Management and Microfinancial Services**

Over the past several years, the credit options available to microentrepreneurs in Lima have multiplied. In the past, the options were limited to moneylenders, ROSCAs, and family and



friends. Today, microentrepreneurs have access to many more sources of credit. Supplier credit for both inventory and fixed assets has become commonplace, and a host of newly established microenterprise lenders provide microentrepreneurs with formal-sector loans at competitive interest rates. Consumer credit and credit for home improvements have become much more commonplace in the late 1990s, while the popularity of ROSCAs appears unabated. This expanded range of credit options has resulted in both opportunities and challenges for microentrepreneurs. Prudent and skillful use of available credit options and other financial tools, both formal and informal, have helped entrepreneurs develop their businesses and improve household income. On the other hand, unwise use of credit or inopportune exogenous forces have lead to negative outcomes for some households.

The objectives and strategies of households and entrepreneurs are not static, but rather shift constantly in response to dynamic internal and external forces unique to each household. To meet the challenges and opportunities that arise over time, household financial strategies must be flexible. In order to keep pace with households, microfinance organizations also must offer a variety of products and services that are flexible and dynamic. The simplistic view is that microcredit is used to purchase more inventory which, when sold, increases revenue and yields sufficient funds for both profit taking and loan payments. The reality is much more complex, and microcredit, though it is an important tool, is only part of a larger financial management picture.

A central policy conclusion from the study is that low-income households can benefit from a well-developed, competitive microfinance industry. For those households with sound financial management, the increased options offered by a well-developed microfinance industry can provide the critical boost they need to achieve their goals. An important policy goal would be to continue to encourage the development of a financial sector that provides a full range of services to clients with small transactions. Whether through credit, savings, or insurance, entrepreneurs can mix and match all of the financial tools available to them in order to meet their unique demands and to take advantage of opportunities that would not be available based on microcredit alone.

## **D.2. Microcredit and Microenterprise Development**

The results indicate that the type of microcredit offered by ACP/Mibanco between 1997 and 1999 helped to promote microenterprise development, even though it was most appropriate for commercial enterprises. The fact that the majority of clients managed commercial sector enterprises was a clear indication of the match between the credit technology and the enterprise sector. Clients' enterprises experienced numerous positive impacts, including higher revenues, higher fixed assets, and greater employment. These impacts were found despite the fact that the study was conducted during a period when enterprise revenues were generally stagnant and total employment fell.

The findings of positive impacts combined with the context of economic recession point to the protective function of microcredit. In other words, because of the economic context in which the study took place, the results demonstrate how microcredit can help to stabilize borrowers' enterprises when other enterprises are experiencing downward trends.

Despite the apparent benefits of microcredit, the findings indicate that there was minimal market penetration by formal and program-based microcredit organizations at the time of the first survey (less than five percent). While ACP/Mibanco has expanded its client base since 1997, and other lenders have also expanded or entered the area, the majority of microenterprises in metropolitan Lima probably still do not receive microcredit from program or formal lenders.

While the reasons for the limited outreach of microcredit are debatable, ACP/Mibanco and other lenders would agree that the microcredit product evaluated in this study does not appeal to all potential borrowers. This specific product was shown to be most appropriate for commercial microenterprises, where the loan is used to augment the working capital of the enterprise. Short loan lengths and frequent repayments make it less suitable for other enterprise uses. In order to stimulate the growth of microenterprises in the industrial sector, where the employment effects are significantly higher, policy makers should encourage the creation and spread of lending technologies that are well adapted to this sector.

### **D.3. Microcredit and Women**

The entrepreneurial women in Lima enjoy many advantages that their sisters around the world do not have, including freedom of movement and a significant role in household decision making. There is a long cultural tradition of women as the dominant traders in the market place, and the women in the sample uphold that tradition. Although some women manage enterprises in the service and industrial sectors, the majority of women continue to choose commercial sector enterprises. This close affiliation between sector and gender may help to explain why the majority of ACP/Mibanco clients were women and why ACP/Mibanco continued to attract and retain more female clients than males during the study period.

Yet, even when sectoral differences are accounted for, there are still several differences between the enterprises of men and women. Men have higher enterprise revenues, more enterprise fixed assets, and hire more non-household workers than women. Men and women also differ in their transaction relationships: men have more fixed sales contracts, sell more often at the wholesale level, and license their enterprises at higher rates than women. The implication of many of these differences is that male entrepreneurs will experience the positive impacts of microcredit at higher levels than will female entrepreneurs.

Within the household, women have similar levels of control over decisions affecting the use of credit and enterprise revenues as their husbands. In fact, since women are more likely to work alone in their enterprises, they tend to have greater management autonomy over their enterprises than the male respondents in the sample, who are more likely to be working with their wives in a joint enterprise. The degree to which married couples cooperate in enterprise and household financial management appears to be determined more by the nature and history of the couple's relationship than by dominant cultural influences.

Despite the smaller scale of their enterprises, there is an almost palpable sense that the women are the dynamic force in Lima's microenterprise sector. Their rates of personal savings and accumulation of enterprise fixed assets are similar to those of men. The central role that female

entrepreneurs appear to play in the economic resurgence of Lima's popular and marginal areas led one ACP/Mibanco credit agent to remark that "the women are rebuilding Peru." Female entrepreneurs are a driving force in Peru's microenterprise sector and should not be overlooked in the design of policies and programs to stimulate the sector.

#### **D.4. Microcredit and the Poor**

The outreach of the ACP/Mibanco microcredit program extends to households in poverty, and the poor households in the sample experience many positive impacts from their participation in the program. The fact that about one-third of the clients are below the poverty line can be viewed as either a testimony to or a condemnation of ACP/Mibanco's level of outreach to the poor, depending on one's perspective. In terms of policy implications, the findings indicate that the type of microcredit evaluated in this study can be beneficial to the entrepreneurial poor and can have a positive impact on poverty alleviation.

However, the clients of ACP/Mibanco can not be characterized as the "poorest of the poor." Very few of the borrowers fall into the category of "extremely poor." For that matter, very few of the borrowers' non-client counterparts in the control group are extremely poor. This suggests that the entrepreneurial households of metropolitan Lima are not usually drawn from the most destitute of the population. Instead, the majority of the entrepreneurial households in the study come from working households who live somewhat above or below the poverty line. As a policy matter, the findings suggest that microcredit may not be an appropriate assistance strategy for households under conditions of extreme poverty.

The working poor living somewhat below the poverty line should not be stereotyped as either ideal or terrible candidates for microenterprise credit. Among the poor households in the sample, there were both successful and unsuccessful borrowers. The successful borrowers used credit appropriately, guarded their repayment capacity, and derived small but significant economic benefits from their use of microcredit. The unsuccessful borrowers got into trouble with repayments, either due to poor enterprise management, bad luck, becoming over indebted (possibly through multiple debts), or some combination of these.

These findings imply that the moderately poor can use microcredit productively, but their success depends on the same factors that determine the success of all entrepreneurs: good ideas, hard work, careful management, adequate markets, and a reasonable measure of good luck. Microcredit can have positive impacts on the poor, but the poor experience many of these impacts on a somewhat smaller scale than their non-poor counterparts. At the same time, the indebted poor appear to be particularly vulnerable to the asset depleting effects of unexpected shocks. For all poor households, the economic margin in which they maneuver is small and mistakes can be costly. Policies and programs that support the poor in building and maintaining an adequate asset base could provide the poor with income security and a possible stepping stone out of poverty.

#### **D.5. Microcredit and Household Welfare**

For households in the sample, microenterprises are the most important sources of income within the household economic portfolio. These entrepreneurial households frequently have more than

one microenterprise, and they depend on microenterprise revenues to meet their daily expenses and to implement their long-term economic strategies. Microcredit, by enhancing the income that households receive from their microenterprises, has an important positive impact on the general welfare of households.

The results provide no clear indication whether microfinance is an appropriate vehicle for achieving specific welfare goals such as better nutrition, improved housing, and greater education. Among the poor, there is some evidence that microcredit improves food and beverage expenditures. On the other hand, new borrowers may be more likely to divert spending away from the education of their children. In the long run, microcredit is associated with higher incomes, and higher incomes can be expected to lead to improvements in all of these variables.

In many ways, the period between 1997 and 1999 was a difficult time for the microentrepreneurs of Lima, who experienced it as a period of economic recession. The impact of the ACP/Mibanco microcredit program was to provide clients with some protection from the negative economic influences around them. Microcredit served to protect the income of client households, and borrowers felt better prepared to face the future than their non-client counterparts. The study results indicated that there were a number of positive and negative impacts of microcredit. Taken as a whole, the results suggest that entrepreneurial households receiving microcredit are better off than their non-client counterparts, and that many of the benefits of microcredit can be expected to increase as the client spends more time in the program.

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## APPENDIX 1: ACP/MIBANCO ACTIVITY AND FINANCIAL STATEMENT<sup>a</sup>

	1995	1996	1997	1998	1999
<b>ACTIVITIES</b>					
Amount of loans outstanding	17,757,290	25,149,932	34,256,684	37,990,194	67,073,017
Number of loans outstanding	19,120	26,678	33,549	33,858	41,344
Delinquency rate <sup>b</sup>	3.51%	4.45%	4.94%	0.78%	1.05%
Long run loss rate <sup>c</sup>	2.27%	3.14%	1.75%	0.00%	0.60%
<b>INTEREST RATES</b>					
Nominal interest rate	107.5%	95.2%	83.9%	78.0%	69.0%
Local interbank interest rate <sup>d</sup>	15.0%	14.1%	12.8%	12.5%	16.9%
Inflation rate <sup>e</sup>	10.2%	11.8%	6.5%	7.3%	3.5%
Exchange rate <sup>f</sup>	2.36	2.60	2.72	3.13	3.48
<b>CLIENT REVENUES</b>					
Interest income from clients	12,227,160	20,298,124	23,631,916	16,087,731	33,233,486
Fee income from clients	-----	-----	-----	-----	-----
<b>NON-FINANCIAL EXPENSES</b>					
Administration <sup>g</sup>	4,932,554	9,351,669	12,459,296	11,036,323	20,976,042
Depreciation of fixed assets	129,652	213,801	497,000	774,604	2,021,092
Loan loss provision	1,228,604	4,952,967	8,051,329	901,384	1,400,876

Notes: <sup>a</sup> All information is recorded in local currency (nuevo soles) and refers to the end of the fiscal year (December 31).

<sup>b</sup> Delinquency rate is calculated by dividing the unpaid balance of loans with payments overdue more than 90 days by the amount of loans outstanding at end of year.

<sup>c</sup> Long run loss rate is calculated by dividing the amount of loans written off during the year by amount of loans outstanding.

<sup>d</sup> Source: Central Bank of Peru (BCRP).

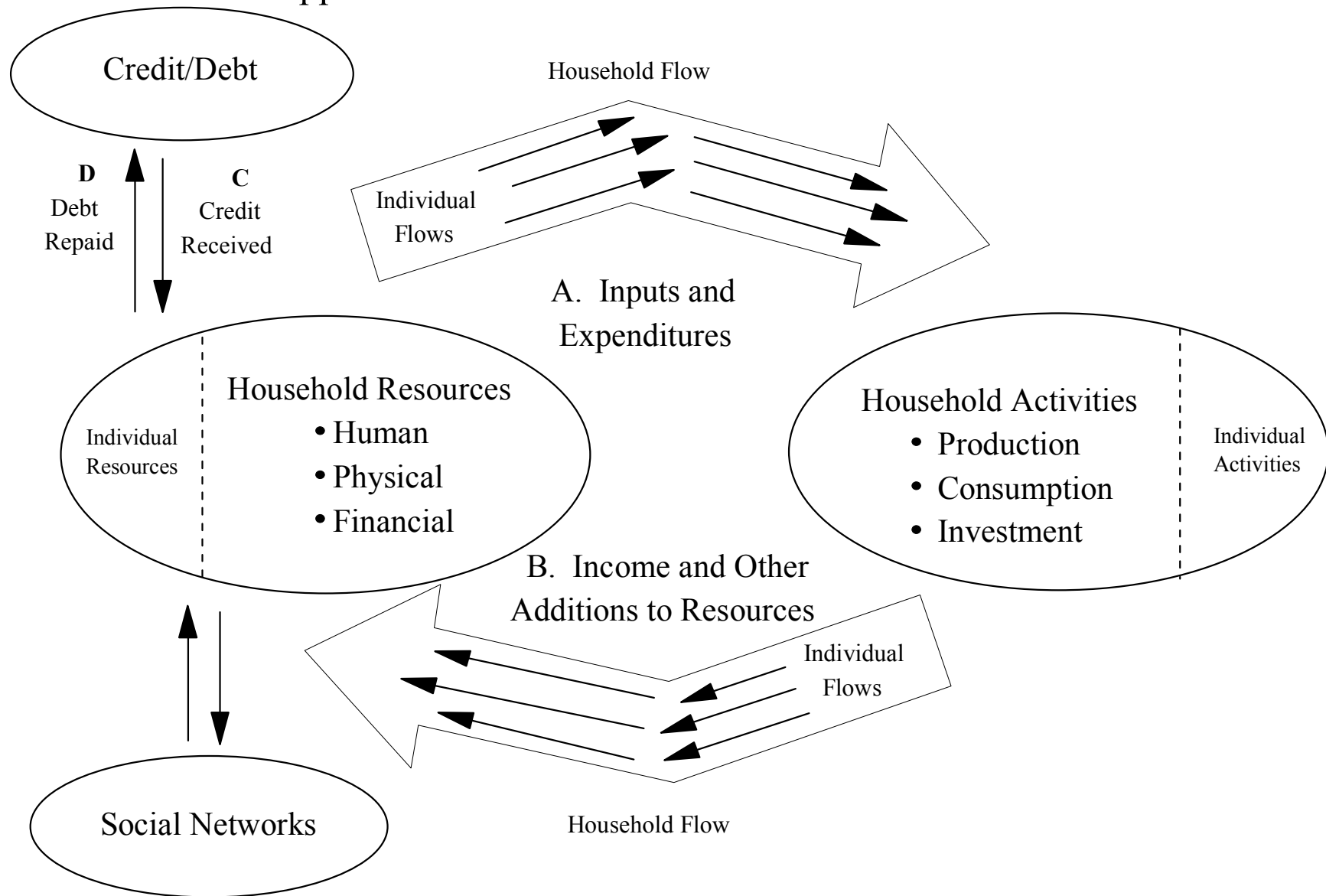
<sup>e</sup> Source: National Statistics Institute (INEI).

<sup>f</sup> Number of Peruvian nuevo soles per US\$1.00.

<sup>g</sup> Administration includes salaries, value of services and goods provided in-kind by donors



## Appendix 2: Household Economic Portfolio Model





### **APPENDIX 3: CALCULATING THE ONE DOLLAR AND TWO DOLLAR POVERTY LINES FOR PERU**

To assess income poverty based on global standards, the AIMS Core IA studies used the World Bank “one dollar-a-day” and “two dollars-a-day” poverty lines. These are global standards based on the concept of purchasing power parity (PPP) which compare per capita household income to income levels equivalent to approximately US\$1 per person, per day and US\$2 per person, per day. The “one-dollar” line is equal to the mean national poverty line of ten low-income countries and the “two-dollar” line matches the same for ten lower middle-income countries (World Bank 2000). Since the purchasing power of the equivalent of US\$1 varies by country, these lines must be adjusted for individual countries using purchasing power parity estimates from the United Nations’ International Comparison Project, resulting in poverty lines which reflect price structure differences between countries.

The steps followed to derive the two poverty lines for Peru are the following:

1. Convert the 1993 one dollar estimate (US\$1.08) to an amount that reflects the changes in consumer prices between 1993 and 1997. The percent increase in prices between 1993 and 1997 in Peru was 68.8 percent. Thus, the 1997 equivalent to one dollar-a-day was  $1.08 * 1.688$ , or US\$1.82.
2. Convert US\$1.82 to local currency using the exchange rate at the time of the 1997 survey (2.65 soles = \$1US). The resulting one dollar-a-day equivalent for Peru was S/4.8.
3. Adjust for international price differences by dividing the dollar-a-day figure (S/4.8) by the PPP estimate for Peru (1.71), resulting in S/2.8.
4. Adjust for the relative price of private consumption by multiplying S/2.8 by the index for Peru of 1.06, resulting in S/2.97.
5. Convert the income-based measure to a consumption-based measure by dividing 2.97 by the aggregate national consumption number of .80. This gives the adjusted dollar-a-day figure for Peru of S/3.71.
6. Convert to annual terms ( $S/3.71 * 365$ ). For Peru in August 1997, the “one-dollar” line is S/1,354 per person per year. The “two-dollar” line is twice that, or S/2,708 per person per year.





## APPENDIX 4: STATISTICAL TABLES

Table E-1. ANCOVA Estimates of Microcredit Impact on Enterprise Revenue

	Gross Monthly Revenues from Primary Enterprise		Gross Monthly Revenues from Enterprises 1-3		Annual Net Revenues from All Enterprises	
	Treatment vs. Control (n=367)	New Entrant vs. Control (n=172)	Treatment vs. Control (n=430)	New Entrant vs. Control (n=194)	Treatment vs. Control (n=460)	New Entrant vs. Control (n=208)
Intercept	1098	1039	3355 ***	1868 **	8062 ***	5692 ***
Microcredit	317	518	1028 **	347	3427 ***	2521 *
Revenue in 1997	.534 ***	.497 ***	.418 ***	.381 ***	.329 ***	.493 ***
Commercial Sector Enterprise	-459	809	---	---	---	---
Service Sector Enterprise	-104	413	---	---	---	---
Gender	644 *	1218 **	---	---	---	---
Proximity to Paved Road	31.7	-726	---	---	---	---
Formal Premise	582	-401	---	---	---	---
Informal Premise	-208	-746	---	---	---	---
Popular Zone	297	204	---	---	---	---
Marginal Zone	638	877	---	---	---	---
Ownership of Business Premise	155	-190	---	---	---	---
Number of Enterprises	---	---	-365	244	667	619

\* p<.10; \*\* p<.05; \*\*\* p<.01

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table E-2. ANCOVA Estimates of Microcredit Impact on Enterprise Fixed Assets

	Value of Enterprise Fixed Assets for Primary Enterprise		Value of Enterprise Fixed Assets for All Enterprises
	Treatment vs. Control (n=354)	New Entrant vs. Control (n=172)	Treatment vs. Control (n=457)
Intercept	6,078 <sup>***</sup>	7,460	3,358 <sup>**</sup>
Microcredit	1,700 <sup>**</sup>	1,537	509
Fixed Asset Variable in 1997	.425 <sup>***</sup>	.350 <sup>***</sup>	.629 <sup>***</sup>
Commercial Sector Enterprise	-3,792 <sup>**</sup>	-5,487 <sup>***</sup>	--
Service Sector Enterprise	-1,310 <sup>**</sup>	-2,119 <sup>***</sup>	--
Gender	485	-661	--
Proximity to Paved Road	1,803 <sup>**</sup>	1,137	--
Formal Premise	334	2,364 <sup>*</sup>	--
Informal Premise	-1,426	509	--
Popular Zone	-1,378	-1,597	--
Marginal Zone	-2,313	-1,329	--
Ownership of Business Premise	1,244	1,996	--
Number of Enterprises	--	--	-1,160 <sup>*</sup>
Annual Household Income	--	--	.081 <sup>**</sup>

\* p<.10; \*\* p<.05; \*\*\* p<.01

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table E-3. ANCOVA Estimates of Microcredit Impact on Enterprise Employment

	Primary Enterprise			Up to Three Enterprises	
	Days/ Month - All Workers (n=373)	Days/ Month - Non-HH Members (n=374)	Wages/ Month - All Workers (n=370)	Days/ Month - All Workers (n=439)	Days/ Month - Non-HH Members (n=433)
Intercept	20.5 <sup>***</sup>	-1.66 <sup>*</sup>	136 <sup>**</sup>	43.9 <sup>***</sup>	7.04 <sup>***</sup>
Microcredit	4.55 <sup>*</sup>	2.45 <sup>**</sup>	29.7 <sup>a</sup>	9.07 <sup>**</sup>	3.26 <sup>**</sup>
Independent Variable in 1997	.439 <sup>***</sup>	.436 <sup>***</sup>	.307 <sup>***</sup>	.425 <sup>***</sup>	.345 <sup>***</sup>
Commercial Sector Enterprise	2.78	-5.07 <sup>**</sup>	-147 <sup>***</sup>	--	--
Service Sector Enterprise	-.136	-.861	-41.7 <sup>***</sup>	--	--
Gender	-.217	2.33 <sup>**</sup>	36.8 <sup>*</sup>	--	--
Proximity to Paved Road	1.08	.246	45.8 <sup>**</sup>	--	--
Formal Premise	5.15	2.71 <sup>*</sup>	47.9 <sup>*</sup>	--	--
Informal Premise	1.84	-.058	39.7	--	--
Popular Zone	-.696	-1.63	-17.6	--	--
Marginal Zone	-1.87	-3.01	-36.2	--	--
Ownership of Business Premise	7.26 <sup>**</sup>	2.09 <sup>b</sup>	29.5	--	--
Number of Enterprises	--	--	--	-1.31	-1.13

\* p<.10; \*\* p<.05; \*\*\* p<.01

<sup>a</sup> p=.134; <sup>b</sup> p=.107

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table E-4. ANCOVA Estimates of Microcredit Impact on Transaction Relationships

Effect	Type of Supplier (Comm'l Sector Only)		Ownership of Business Premise	
	Treatment vs. Control (n=283)	New Entrant vs. Control (n=133)	Treatment vs. Control (n=379)	New Entrant vs. Control (n=177)
Intercept	.902 <sup>***</sup>	.772 <sup>***</sup>	.567 <sup>***</sup>	.218
Microcredit	.094 <sup>***</sup>	.049	.090 <sup>**</sup>	.000
Independent Variable in 1997	.158 <sup>***</sup>	.057	.472 <sup>***</sup>	.547 <sup>***</sup>
Commercial Sector Enterprise	---	---	-.084	.114
Service Sector Enterprise	---	---	-.023	.053
Gender	-.022	-.018	.026	.078
Proximity to Paved Road	-.052 <sup>a</sup>	-.001	-.003	.000
Formal Premise	-.050	-.011	-.182 <sup>***</sup>	-.148 <sup>**</sup>
Informal Premise	-.037	.004	-.363 <sup>***</sup>	-.349 <sup>***</sup>
Popular Zone	-.029	-.091	.000	-.012
Marginal Zone	-.057	.028	-.037	-.021
Ownership of Premise	.006	.094	---	---

\* p&lt;.10; \*\* p&lt;.05; \*\*\* p&lt;.01

<sup>a</sup> p=.158

Table E-5. ANCOVA Estimates of Microcredit Impact on Formalization

	Licensed with Municipality		Registered with Tax Authority	
	Treatment vs. Control (n=383)	New Entrant vs. Control (n=179)	Treatment vs. Control (n=382)	New Entrant vs. Control (n=179)
Intercept	.250 **	.337 *	.175	.317 *
Microcredit	.079 *	.053	.013	-.059
Formalization Variable in 1997	.365 ***	.424 ***	.572 ***	.571 ***
Commercial Sector Enterprise	.144 *	-.006	.118	-.038
Service Sector Enterprise	.048	-.045	.038	-.006
Gender	.186 ***	.143 *	.094 **	.033
Proximity to Paved Road	.052	-.021	.036	-.032
Formal Premise	-.047	.018	-.140 ***	-.187 **
Informal Premise	-.185 **	-.179	-.168 ***	-.161 <sup>a</sup>
Popular Zone	-.120 **	.007	-.085 *	.011
Marginal Zone	-.198 **	-.159	-.141 **	-.151 <sup>b</sup>
Ownership of Business Premise	.134 **	.117	.053	-.035

\* p&lt;.10; \*\* p&lt;.05; \*\*\* p&lt;.01

<sup>a</sup> p=.150; <sup>b</sup> p=.172

Table H-1. ANCOVA Estimates of Microcredit Impact on Household and Per Capita Income

	Total Household Income (n=464)	Per Capita Household Income (n=464)
Intercept	12475 <sup>***</sup>	3428 <sup>***</sup>
Microcredit	4,556 <sup>***</sup>	995 <sup>***</sup>
Household Income in 1997	.352 <sup>***</sup>	.373 <sup>***</sup>
Number of Economically Active Household Members	1,387 <sup>**</sup>	242 <sup>*</sup>
Number of Income Sources	-453	-216 <sup>*</sup>

\* p<.10; \*\* p<.05; \*\*\* p<.01

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table H-2. ANCOVA Estimates of Microcredit Impact on Income Diversification

	Treatment vs. Control			New Entrant vs. Control	
	All Households (n=468)	Non-Poor Households (n=321)	Poor Households (n=146)	Non-Poor Households (n=120)	Poor Households (n=85)
Intercept	.976 <sup>***</sup>	1.06 <sup>***</sup>	.841 <sup>***</sup>	.566 <sup>**</sup>	.848 <sup>***</sup>
Microcredit	.007	-.101	.276 <sup>*</sup>	-.440 <sup>**</sup>	.282 <sup>a</sup>
Diversification in 1997	.247 <sup>***</sup>	.222 <sup>**</sup>	.294 <sup>**</sup>	.183	.431 <sup>**</sup>
Number of Economically Active Household Members	.107 <sup>***</sup>	.089 <sup>**</sup>	.164 <sup>***</sup>	.053	.306 <sup>***</sup>
Number of Income Sources	.114 <sup>**</sup>	.098 <sup>*</sup>	.173 <sup>**</sup>	.215 <sup>*</sup>	-.120 <sup>**</sup>
Household Income	.000	.000	-.000 <sup>*</sup>	.000	-.000

\* p<.10; \*\* p<.05; \*\*\* p<.01

<sup>a</sup> p=.166

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table H-3. ANCOVA Estimates of Microcredit Impact on Household Assets

	Housing Improvements (n=451)	Expenditures on Appliances (n=458)	Value of Combined Enterprise Fixed Assets (n=457)
Intercept	199	884 <sup>*</sup>	3,358 <sup>**</sup>
Microcredit	31.4	107	509
Value of Independent Variable in 1997	.062 <sup>*</sup>	.053	.629 <sup>***</sup>
Household Income	.003	.005 <sup>*</sup>	.081 <sup>**</sup>
Ownership of Home	167	--	--
Age Respondent	--	-11.8 <sup>**</sup>	--
Number of Microenterprises	--	--	-1,160 <sup>*</sup>

\* p<.10; \*\* p<.05; \*\*\* p<.01

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table H-4. ANCOVA Estimates of Microcredit Impact on Education Expenditure per Student

	Treatment vs. Control Groups (n=350)	New Entrant vs. Control Groups (n=152)
Intercept	233 <sup>***</sup>	.061
Microcredit	-54.6	-199 <sup>***</sup>
Education Expenditures per Student in 1997	.496 <sup>***</sup>	.720 <sup>***</sup>
Number of Students per Household	5.62	-.831
Household Income	.004 <sup>***</sup>	.003

\* p<.10; \*\* p<.05; \*\*\* p<.01

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table H-5. ANCOVA Estimates of Microcredit Impact on Per Capita Food Expenditures

	All Households (n=463)	Poor Households (n=147)
Intercept	3.22 ***	2.14 ***
Microcredit	.132	.338 <sup>a</sup>
Per Capita Food Expenditures in 1997	.240 ***	.422 ***
Number of Household Members	-.108 **	-.061
Household Income	.000 **	.000 <sup>b</sup>

\* p<.10; \*\* p<.05; \*\*\* p<.01

<sup>a</sup> p=.155; <sup>b</sup> p=.136

Note: Outlying observations (more than 3 z-scores from the mean) were removed from the data prior to estimation.

Table H-6. ANCOVA Estimates of Microcredit Impact on Coping Strategies

	All Households (n=135)	Poor Households (n=38)
Intercept	.352 ***	.203
Microcredit	-.094 *	-.217*
Coping Strategy in 1997	.546 ***	.594 ***
Household Income	.000	.000

\* p<.10; \*\* p<.05; \*\*\* p<.01



Table H-7. ANCOVA and Probit Estimates of Microcredit Impact on Intergenerational Launching

	ANCOVA		Probit	
	Treatment vs. Control Groups (n=351)	New Entrant vs. Control Groups (n=135)	Treatment vs. Control (n=399)	Time in Program (n=431)
Intercept	.125**	.005	-2.36***	-2.21***
Microcredit	.043	-.052	.616***	---
Time in Program	---	---	---	.193***
Launching in 97	.165**	.131	---	---
Value of Enterprise Fixed Assets	.000	.000**	.000	.000
Annual Income	-.000	-.000	.000	.000
Per Student Educational Expenditure	.000	-.000	-.000	-.000
Dependency Ratio	-.004	.009	-.123	-.144
Gender	---	---	-.342**	-.360**
Age of Informant	---	---	.027***	.025***

\* p<.10; \*\* p<.05; \*\*\* p<.01

Table I-1. ANCOVA Estimates of Microcredit Impact on Control Over Household Resources

	Decision to Solicit Loan <sup>a</sup> (n=273)	Decision on Loan Use <sup>a</sup> (n=273)	Decision on Revenue Use (n=348)
Intercept	.721***	.598***	.514***
Microcredit	--	--	.008
Value of Independent Variable in 1997	.185***	.300***	.268***
Gender	-.038	.051	-.027
Marital Status	-.231***	-.170*	-.265***
Other Economically Active Members in Household	-.188	-.172	.083

\* p&lt;.10; \*\* p&lt;.05; \*\*\* p&lt;.01

<sup>a</sup> Loan-related decisions were only measured for the client group. Gender was used as the fixed factor in the ANCOVA analysis.

Table I-2. ANCOVA Estimates of Microcredit Impact on Self-Esteem and Respect from Others

	Importance of Contribution (n=353)	Other Adults Value Contribution (n=333)
Intercept	.934***	.864***
Microcredit	-.027 <sup>a</sup>	-.012
Self-Esteem Variable for 1997	.039	.035
Gender	-.001	.033
Marital Status	-.005	-.036

\* p&lt;.10; \*\* p&lt;.05; \*\*\* p&lt;.01

<sup>a</sup> p=.110

Table I-3. ANCOVA Estimates of Microcredit Impact on Incidence of Personal Savings

	Incidence of Personal Savings (n=448)
Intercept	.408 ***
Microcredit	.058
Incidence of Savings in 1997	.049
Gender	-.046
Marital Status	-.012
Annual Income	.000 ***

\* p&lt;.10; \*\* p&lt;.05; \*\*\* p&lt;.01

Table I-4. ANCOVA Estimates of Microcredit Impact on Orientation Toward the Future

	Feelings of Preparedness		Taking Specific Action to Prepare for the Future (n=333)
	Treatment vs. Control (n=353)	New Entrant vs. Control (n=170)	
Intercept	.555 ***	.632 ***	.671 ***
Microcredit	.084 *	.198 **	.017
Future Variables for 1997	.224 ***	.262 ***	.136 ***
Gender	.003	.040	.013
Other Economically Active Members in Household	.032	-.083	.013
Annual Income	-.000	.000	.000

\* p&lt;.10; \*\* p&lt;.05; \*\*\* p&lt;.01